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APPENDICITIS IN CHILDREN: A STUDY OF SEVENTY CASES OCCURRING BETWEEN THE AGES OF TWO AND FIFTEEN YEARS.*

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The peculiarities of appendicitis in children are sufficient to call for special consideration. The diagnosis is sometimes particularly difficult, the course of the disease often differs from that in adults. The prognosis in certain forms of inflammation is distinctly better than in adults, whereas in others the overwhelming virulence is even more startling. Many articles have been written on the subject, some reviewing the general subject as it stood at the time the article was written, others calling attention to the particular elements which had most impressed their authors. McCosh¹ calls particular attention to the insidious and often rapid course of the disease, and he and de la Carriere² have emphasized persistent vomiting as a symptom of much diagnostic importance; Richardson,³ Griffiths⁴ and Morse⁵ called attention to the remarkable way in which beginning pneumonia gives pain and rigidity in the appendicular region, and hence leads to great difficulty in diagnosis. Erdmann⁶ has found that the movements of the hand and arm which the child makes to protect the tender abdomen are characteristic. Karewski⁷ and Selter⁸ emphasize the frequency of previous attacks of gastro-intestinal disturbance; also the importance of rectal examination, since the child's pelvis is small and the inflammation usually extends along the right pelvic wall. Karewski also refers to the frequent desire to urinate and pain on doing so, and Selter to the frequency of diffuse peritonitis which is relatively more common in children than in adults. Mayo, Bloodgood, Albaran, Rally and Metchnikoff record instances of intestinal worms causing either the disease or symptoms which suggest it. All of these writers, and many others in addition, indicate that there are certain peculiarities of the disease as seen in children.

Since not many studies or groups of cases have been published, the writer has, with the help of Dr. Charles E. Farr, ex-House Surgeon of St. Mary's Hospital for Children, studied the records of 70 children, two to fifteen years of age, who have been operated upon for appendicitis either in that hospital or in private prac-

tice since 1895, comparing them with a considerably larger number of adult patients whom he has operated upon during that same period. They were mostly acute cases sent into the hospital during the course of the disease and operated upon without delay.

A clinical division of the cases which has often been used in considering the subject, is the following: (1) *Early cases*, whose operations came within the first two days; (2) *Later, active cases*, whose operations came during the progressive or retrogressive stage of the disease, but later than the second day; (3) *Interval cases*, whose operations came after the inflammation has subsided.

In this series there were eleven early cases, forty later active cases and nineteen interval cases.

Group I. Early Cases.—Forty-eight hours has frequently been set as an arbitrary time dividing the period of intra-appendicular inflammation from that of abscess formation or spreading peritonitis. Even in adults, this division is subject to many exceptions. In children there are even more. The following history illustrates the characteristics of the early causes as they have come to the hospital. The symptoms were pain, vomiting, prostration, fever and localized muscular rigidity of a very definite character. Their duration was less than twenty-four hours. Operation revealed a perforated appendix and beginning peritonitis.

Annie A., aged nine years, was in her ordinary health until the night before admission to the hospital, when she began to have much pain. The maximum intensity was a little to the right of the umbilicus, but she felt it generally through the abdomen. She vomited several times. Felt much depressed through the day and was brought to the hospital at the end of the afternoon. At that time the pain was much less, but there was tenderness on pressure over the lower right part of the abdomen, and muscular rigidity, much more marked on the right than on the left side. This was so great and so distinctly defined that it seemed almost as though there must be a mass below it, the lower part of the rectus being so definitely hardened as to give the impression that the mass extended only to about the level of the umbilicus. The facies indicated severe illness. The abdomen showed no distention and no tympanites. Temperature 101.4° F., pulse 134, respiration 26. The pulse was weak and thready and not of good quality. Leucocyte count, 3,200; 91 per cent. polynuclear. Operation done without delay, i.e., twenty-four hours after the onset of symptoms. On incising the peritoneum there was a gush of purulent

* Read before the Hospital Graduates' Club, April 27, 1905.

serum; thin, but whitish. The appendix was found to contain a large concretion. The mucous membrane of the terminal inch and a half was gangrenous; it was perforated in two spots and intensely inflamed. The intestines in the vicinity were covered with fibrin, but so much of intestine as was seen at a distance from the appendix was only moderately congested, although bathed in cloudy serum. The appendix was removed. Stump ligated and buried. One gauze drain inserted. She recovered promptly without incident. Drainage entirely removed on seventh day; wound completely healed on sixteenth day.

This case represents fairly well the eleven cases whose operations came within the first two days, but was more acute and rapid in its progress than the average. These eleven cases may be summarized as follows: Three had had previous attacks. In all of them pain had come at the beginning of the attack; in four the first pain was described as "abdominal" or in the umbilical region; in all it finally became most marked on the lower right side of the abdomen; all vomited; all had distinct localized muscular rigidity. In six of the cases the appendix had ruptured. In four there was beginning peritonitis away from the appendix. All recovered promptly.

In this group of cases the rapidity of the progress of the inflammation is the notable peculiarity. It would be difficult to find a group which in other respects conforms more completely to the classical symptoms of the disease.

The good results are what would be expected in patients whose operations came within the first forty-eight hours of the disease, and forcibly illustrate the importance of prompt diagnosis and early operation.

Group II. Later Active Cases.—The main interest hinges about the group whose operations came between the second and twenty-second day. They stand in marked contrast to those whose operations came on the first or second days. The inflammation had extended further, sometimes to the formation of diffuse or general peritonitis, sometimes to the formation of single or multiple abscesses.

There is a mortality rate in these cases; among 32 children whose operations came on the third to the seventh day there were four deaths, and among eight whose operations came in the second and third weeks there were three deaths. This makes the mortality rate 10 per cent. for the entire series, a rate which stands about midway in the reports of appendicitis which have been made; not so good as some, not so bad as some; probably as good as can be expected, in the present state of surgery, in children whose inflammations have reached the advanced stage which this series shows. Many of the patients were only sent to the hospital when it was manifest that they would soon die if left at home; these patients were regularly operated upon with the exception of one in a moribund stage, who

died six hours after admission. This method has been followed in these desperate cases because it is particularly in children that recovery has followed operation in advanced peritonitis, and it seemed unfair to withhold the slight chance of recovery which it offered. The results have justified the method, as some very desperate cases have recovered. The mortalities occurred almost entirely among these far-advanced cases. In four of the fatal cases there was general peritonitis at the time of operation, with the dissemination of pus and fibrin throughout the abdominal cavity. Two patients had multiple abscesses in different parts of the abdominal cavity. The seventh presented peculiarities which are worthy of note. She had suffered from a rather mild attack of appendicitis, but as the symptoms were diminishing when she came to the hospital operation was delayed until they had subsided. After ten days no symptoms of inflammation could be detected and the operation was done. The tip of the appendix, however, was found to lie in a very small abscess cavity at the outer side of the cecum. This was four years ago when much was being written and said about small drains or even no drains in cases of this kind, and accordingly after cleaning the cavity with dry gauze a single small gauze drain wrapped in rubber tissue was inserted. The child died seven days later of general peritonitis, which had progressed, with daily stools and without early tympanitis in the insidious way which is so much dreaded in children. The small cigarette drain was a distinct error, I believe; a good-sized gauze drain not wrapped in rubber tissue would have been much better.

In this group there were 19 patients who had diffuse or general peritonitis. Where the inflammation at a distance from the appendix has been slight the peritoneum has been trusted to care for it and only the local abscess has been drained. When the general inflammation has been severe, thorough irrigation with saline solution has been used.

It is not the purpose of this paper, however, to discuss the method of dealing with general peritonitis. Each surgeon is likely to use with children the method which he has adopted for adults. The aim of the paper is to call attention to the peculiarities of the disease as seen in children.

One of these peculiarities has a very strong bearing on the treatment of this late group of cases. It is in this group that the cases come for which some surgeons advocate delay, others immediate operation. Children, however, are peculiarly liable to the insidious, rapidly spreading form of peritonitis which does not give the ordinary symptoms. Hence surgeons generally advocate immediate operation in them no matter what they advise in adults. The subject is important, since delay is distinctly more dangerous for them than for adults. McCosh has particularly advocated this measure, and Ochsner³ calls

attention to the difficulty in limiting inflammation which young children and greatly emaciated adults show, "because of the absence of a sufficiently large omentum to surround the diseased appendix." He, too, advocates early operation in these cases.

It is manifest that operation without delay is important for these cases. The technic need not materially differ from that of adults.

Group III. Interval Cases.—In this group there was no mortality. Eight of the patients had suffered from several attacks; two of them from two attacks each, nine from one attack each. In one instance an appendix which contained a concretion was found in a urachal sinus, and in one instance a congested appendix was found in a hernial sac. Nearly all the appendices showed adhesions, constrictions or thickening at the time of operation. The number of cases in this group was relatively small, 27 per cent. of the entire series, whereas in Murphy's¹⁰ 2,000 cases they constituted 66 per cent. of the series, and in 1,000 cases which Ochsner reported in 1904 they were 54 per cent. of the series. The small percentage of interval cases manifestly makes the general mortality rate seem higher than it otherwise would.

General Consideration of Symptoms.—In order to study the peculiarities of the disease as shown in this group of children, we may consider the symptoms in turn, not counting the interval group, many of whom were not seen by the writer in primary attacks. *Pain* was a constant symptom, and it was almost always in the upper or middle part of the abdomen, at first and localized near the right iliac region later. In one instance the tip of the appendix lay slightly left of the median line, and the pain was most marked on the left side. In many instances where the tip of the appendix lay high the pain was correspondingly high. The expression of pain was naturally not so definite as in adults, and several times the symptom to which Dr. Erdman calls attention, of holding up the hand in protection of the tender abdomen, was very noticeable and was a valuable guide.

Muscular Rigidity and Tumefaction.—The physical examination of the abdomen in this series of cases was much more satisfactory than one would expect from studying the other records of this disease in children, possibly because so many of the cases were seen late. The abdominal muscles of children are peculiarly sensitive to inflammations below them. The writer has seen as characteristic muscular rigidity in an infant of six and a half pounds with an abdominal lesion as he has ever seen in adults. With a localized appendicitis this muscular rigidity is also localized, and a distinct difference can usually be made out between the two sides of the abdomen and between the upper and lower part of the right side. In only one instance in the entire group did this symptom fail. That was a child whose

tonsils had previously been removed without anesthetic, and who was so terrorized at the sight of a strange doctor that he cried and kept both sides of the abdomen equally tense. Pressure on the thigh was followed by the same evidence of pain as pressure on the abdomen, and the right and left sides of the abdomen seemed equally tender, and the vigorous crying of the child was not what one would expect with a severe disease. He had, however, a beginning peritonitis from a ruptured appendix, and the physical examination was therefore entirely misleading. With this exception the abdominal palpation has been rather more satisfactory than in adults. In a recent article on the subject chloroform anesthesia is advised for abdominal examination. This has never seemed to the writer advisable, since the anesthetic takes away the muscular rigidity which is so important in diagnosis. Usually abdominal palpation has been more satisfactory before the anesthetic than after it. After the patient was on the table and anesthetized it would sometimes seem that there must have been a mistake in diagnosis, since so little evidence of inflammation remained. There has always, however, been much disease in or about the appendix which had occasioned the muscular rigidity.

Vomiting has been practically a constant symptom. Sometimes it has been repeated, and may be considered rather more definite a symptom in children than in adults.

Rapidity of the Disease.—Without question the spread of the inflammation is more rapid and more insidious in children than in adults. All observers seem to agree to this, for all who have observed many cases occasionally note one in which the disease pursues a most rapid, insidious course which leads to general peritonitis of a most violent type. It is this characteristic which makes surgeons fear so much the disease in these patients, and advise immediate operation in all active cases.

The *pulse* and *temperature* have usually increased gradually, the former reaching 120 or 130 per minute on the second or third day and the latter 102° or 103° F. The variations seem to be dependent on the degree of septic absorption.

Blood Examination.—Very good authorities have stated that the blood examination in children is not a valuable guide. This series does not furnish large statistics on this point, because many of the cases occurred before blood examinations were so common as they now are, and in most of them the diagnosis was clear without that aid. The following counts were made in eleven cases: 52,000, 21,000, 27,000, 13,500, 11,000, 16,000, 20,000, 21,000, 32,000, 28,000, 35,000 per c.mm. It will be noticed that with two exceptions the count was very high indeed, and this seems to be characteristic of children. The primary leucocyte reaction is usually very marked, five of these being between twenty-seven and fifty-two thousand. The later reaction, in which

leucocytosis tails, also seems to be about as marked. Two of these patients who had severe inflammation with abscess, pulse of 130 and 132, temperature 102.4° and 102° F., had only 13,500 and 11,000 respectively. Their blood examinations were made, the first on the fifteenth and the second on the seventh day of the disease. We do not know whether they had an early leucocytosis or not.

Dr. Frederic E. Sondern has kindly furnished six leucocyte counts from cases of appendicitis in children which indicate the value of the increased proportion of polynuclear cells in them as well as in adults. In three of them who had gangrenous appendices the percentage of polynuclear cells was 86 per cent., 85.8 per cent. and 95.2 per cent., the number of leucocytes per c.mm. respectively 7,700, 14,000 and 29,800. The low leucocytosis in the first of these cases was apparently not a reaction, but a condition found early in the disease due to weak body resistance. In three other patients who recovered without operation the polynuclear percentage was respectively 63.5 per cent., 62 per cent. and 63.8 per cent., the corresponding leucocyte counts 25,100, 8,800, 11,700.

Beginning pneumonia occasionally gives symptoms which closely resemble appendicitis, particularly in children. Many observers have referred to this. Griffith has collected the histories of 26 such cases. Richardson in recording five of them comments on the great difficulty in diagnosis which they sometimes give. The writer has seen four such cases, two in children and two in adults. Fortunately in each instance crepitation or harsh breathing had appeared in the chest when examination was made. The rapid respiration rate and the sudden high rise of temperature which pneumonia gives are important aids to diagnosis.

Constipation is much less frequent in children than in adults in peritonitis. The writer has seen several cases of peritonitis in children accompanied by diarrhea.

Gibney¹¹ has called attention to the occasional resemblance between *hip-joint disease* and appendicitis. One case of hip disease simulating appendical abscess has come to the writer's notice.

A word should be said about the ability of children to stand operative procedure in appendicitis. They are more likely to recover from general peritonitis than adults. They react from a short operation very well indeed, but prolonged operations on them are to be avoided if possible.

In considering the series as a whole, we may agree with Deaver¹² that the percentage of more severe grades of appendicitis is greater in children than in adults, and to recapitulate the peculiarities of appendicitis in children we may say that (1) the rapidity and insidiousness of the disease are much greater; (2) that the percentage of diffuse and general peritonitis is greater, probably because the omentum is less apt to in-

close the inflamed appendix; (3) that the pain is almost always present, but is more difficult to interpret; (4) that the vomiting is almost always present and is frequently many times repeated; (5) that the abdominal palpation in the majority of cases is as satisfactory or more satisfactory than in adults, but in a few cases is absolutely misleading; (6) that constipation is much less likely to be present; (7) that they have a greater ability to deal with general peritonitis than adults do; (8) that during the acute progress of the disease delay is more dangerous than in adults, because of the insidious course of the disease and the greater tendency to peritonitis, and immediate operation is to be advised.

- 1 McCosh: Journal of American Medical Association, Sept. 24, 1904.
- 2 Carron de la Carriere: Quoted by Kelly, "The Vermiform Appendix and its Diseases," p. 456.
- 3 Richardson: Boston Medical and Surgical Journal, 1902, April 10, p. 399.
- 4 Griffith: Journal of American Medical Association, August 29, 1903.
- 5 Morse: American Gynecology and Pediatrics, 1904, Vol. XIII, p. 143.
- 6 Erdmann: New York Medical Journal, March 19, 1904.
- 7 Karewski: Deutsche medicinische Wochenschrift, 1897, p. 294.
- 8 Selter: Archiv f. Kinderheilkunde, 1901, Vol. XXXI, p. 59.
- 9 Ochsner: Journal of the American Medical Association, September 24, 1904, p. 864.
- 10 Murphy: American Journal of the Medical Sciences, August, 1904, p. 187.
- 11 Gibney: American Journal of the Medical Sciences, 1881, Vol. LXXXI, p. 119.
- 12 Deaver: Journal of the American Medical Association, September 24, 1904, p. 859.

OVARIAN TRANSPLANTATION.

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ONE of the most important fields of knowledge, in which surgery has come to the aid of physiology, is found in the study of the internal secretions of glandular organs. The practicability of grafting in the human animal glandular tissue, the secretion of which is essential for the normal functions of the body, has been demonstrated by surgery. Thus far these researches have been brought the farthest in connection with the thyroid gland and the ovary, and undoubtedly other glandular structures will be added to this list. In passing, it should be remarked that the transplantation of the skin from one person to another is the pioneer operation of this class, and although we may be ignorant of the character of the internal secretion of the skin, still it belongs properly to the glandular organs.

Before the importance of the internal secretion of the ovary was appreciated, women were deprived of these organs much more freely than is the case at the present time. The study of cases in which all ovarian tissue has been removed by surgery, and of cases in which the ovaries have become gradually destroyed by disease, has given us a pretty clear idea of the symptom complex of the cachexia incident to the withdrawal from the system of the internal secretion of the ovary, or what may be called cachexia ovaripriva. These symptoms may also be somewhat dependent upon the interference

with the ovarian nerves in this class of cases; but the following case which I am about to report points to the internal secretion of the ovary as the thing of chief importance.

As every bit of information bearing upon this subject will help in its general elucidation, the following case is reported, illustrating the cachexia ovaripriva, following the removal of both ovaries, the relief of symptoms by the use of ovarian extract, the cure of the condition by the transplantation of ovary from another woman, and the final recurrence of the disturbances at the end of a year:

The patient, a woman of twenty-seven years, had been operated upon in other hands in 1894 for double pyosalpingitis with adhesions and involvement of the uterus in inflammatory products. A hysterectomy had been done, together with removal of the tubes, one ovary and a part of the other. Much pain had developed later in connection with the remains of the ovary which had evidently become involved in adhesions, and in 1898, in the hands of still another surgeon, this remaining stump of ovary was removed. After the removal of her last ovarian tissue, marked constitutional symptoms developed, such as we have become familiar with in these cases. She came into the hands of the reporter, a striking example of this miserable picture—fainting attacks, hot flashes, gastric crises, nausea, vomiting, perversions of sensation, attacks of dizziness, obstinate constipation, etc. The whole catalogue of nerve sedatives was exhausted without relief. Ovarian extract—inspissated and pulverized ovary—was then administered in five-grain tablets, and was found to be the first remedy that gave relief. After some experimenting it was found that five grains of dried extract of ovary taken three times daily for about two weeks during each month kept her fairly comfortable. When this was omitted for a month the symptoms recurred. She became dependent upon this product of the cow's and sheep's ovary. Ovarian transplantation was suggested to her without any promise of benefit but simply as an experiment. The operation was delayed because of the difficulty of finding a suitable case from which good ovarian tissue could be secured. Finally, my friend Dr. George R. Fowler had the case of a young unmarried woman, without history of pelvic inflammation, who had a small cystoma of the ovary, which he proposed to remove. Accordingly, on November 14, 1903, at the Methodist Hospital, with the two patients side by side on adjoining tables, I opened the abdomen of my patient, excising the old suprapubic scar, and made a slit in the remains of the right broad ligament about 3 cm. long between the bladder and the brim of the pelvis. Dr. Fowler removed the cystic ovary from his patient, and handed it directly to me. The whole mass, cyst and ovary, was the size of a medium-sized lemon. The ovary lay on one side of the cyst, and was

scarcely changed in size or shape. The cyst wall was extremely thin, and represented but little more than peritoneum. The cyst was rapidly cut away from the ovary, leaving a mass of apparently healthy ovarian tissue fully the size of a normal ovary, somewhat flattened, covered on one side with peritoneum and on the other by the lining of the cyst. This was button-holed into the slit in the broad ligament, already prepared for it, peritoneal side exposed. Less than a minute of time was consumed in the transit of the ovary from one woman to the other. The broad ligament wound gaped sufficiently to leave exposed to view in the free peritoneal cavity about one-half of the area of the peritoneal surface of the transplanted ovary. A single, fine catgut suture was introduced at either end of the wound, catching the ovary to prevent rotation or displacement, and the abdomen closed.

The next menstrual crisis occurred ten days after the operation. No ovarian extract was used, but the patient was given a little bromide. This was associated with markedly less disturbance than usual. Following this the nervous disturbances and the signs of her cachexia failed to appear for nearly a year. During that time she attended to her business, and felt rewarded for trouble. Her general health was much better than formerly. The old distressing symptoms did not recur during that time. In October, 1904, the hot flashes first reappeared, and have recurred monthly since that. They are not so bad as before the operation. The attacks of fainting have not returned. She feels that since October there has been a decided change for the worse in her condition, and that the relief which the operation secured for her is passing away.

The experience in this case seems to correspond with that of Dr. Robert T. Morris, whose experiments along these lines, both in rabbits and in the human female, are so well known.¹ He has found that ovarian tissue thus transplanted survives and furnishes its secretions to the system for a certain period of time, and then undergoes degeneration. Whether the benefits from this operation can be made more permanent is a question yet to be solved.

WHAT MEANS DOES THE MODERN OBSTETRICIAN EMPLOY TO PREVENT OPHTHALMIA OF THE NEWLY BORN?²

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It goes without saying that no measure should be neglected which can assist in preventing the occurrence of ophthalmia neonatorum. From the standpoint of the obstetrician there are two means at our command for reducing in frequency, if not practically preventing, ophthalmia neonatorum. These are: First, the ante-partum preparation of the maternal passages in cases in which

¹ Medical Record, 19, 1, 1901; Am. Jour. Obstet., 6, 1903.
² Read before the New York Academy of Medicine, Stated Meeting, May 18, 1905.

they are suspected of infection; second, the dropping into each conjunctival sac immediately after delivery of some antiseptic, as nitrate of silver, protargol or argyrol.

When the maternal passages are suspected, a preliminary course of treatment of the vagina should be instituted, beginning about two weeks before delivery. This should consist in daily or twice daily vaginal douching, first with a mild alkaline solution and then with one of bichloride of mercury in strength 1-5,000. Just before delivery something must be done to provide a substitute for the normal lubricating mucus which will have been washed away by the douching process, and a one per cent. lysol solution will be found useful for this purpose. The vagina may be washed out with it when labor begins.

The scientific gospel of Bumm and Krönig, namely, that the vaginal mucus has a bactericidal action, has been misunderstood as applying to gonococcus infection. It has no such action. To-day there is abundant evidence from many sources to prove that the fetus is in certain cases infected with the gonococcus *in utero* and hence born with gonococcus infection of the conjunctiva. Thus no prophylaxis either in the nature of ante-partum vaginal cleansing or post-partum instillation into the conjunctival sac of antiseptics can in a small percentage avail anything.

If the vagina, as many to-day believe, is usually sterile, it needs no preparation for labor to prevent ophthalmia, if the reverse is true, it does.

At the Emergency Bellevue service and at the New York Maternity, after repeated experiments with and without ante-partum antiseptic preparation of the vagina for labor, I have finally been compelled to use it in all cases without exception, in order to keep my morbidity rate from ophthalmia neonatorum at the lowest figure. Both of these services, however, are largely venereal in character.

At the Manhattan Maternity and Dispensary I am now making use of antiseptic preparation of the vagina in selected cases only, but as the service is at present only three months old we can report nothing of value. In this time we have had one case of ophthalmia neonatorum, and that in spite of Credé's post-partum treatment.

In private practice I am not accustomed to use ante-partum vaginal cleansing—this being a concession to the popular belief that there is less gonococcus infection in private practice, and yet every now and then I see gonococcus infection in spite of Credé's nitrate of silver method of prevention. I had such a case some years ago in my practice, where the husband had his acute gonorrhea in August and married in January. The baby all but lost the sight of both eyes, but finally recovered.

I have every faith in Credé's method for the prevention of ophthalmia neonatorum. In both hospital and private cases I am now accustomed to make use of this method without exception. After repeated experiments with protargol I

have found nothing to compare with silver nitrate in 2 per cent. solution as a prophylactic. As soon as the child is born its face is carefully washed with boric acid solution, separate wipes being used for each eye, and the lids rubbed from the nose outward in each case. Then whether infection is suspected or not, two drops of a 2 per cent. solution of silver nitrate are dropped into each conjunctival sac. The excess is washed away in about thirty seconds with a normal saline solution.

In my experience, solutions of less than 2 per cent. do not destroy bacteria, and although solutions of 3 per cent. are harmless, they are apt to cause "silver catarrh," and are not required.

Of the many substitutes recommended it is very difficult to determine whether they are equal to or have any superiority over Credé's 2 per cent. nitrate of silver, but in my experience, after experimentation in hospital practice, protargol and argyrol are not equal in efficiency to the nitrate of silver treatment.

Ante-partum vaginal cleansing in suspected cases and Credé's nitrate of silver method after birth cannot absolutely abolish gonorrheal ophthalmia, because of the small percentage of intrauterine gonococcus infection, but they can reduce the morbidity to practically nil. As long as men with gonorrhea are permitted to marry and women with gonococcus infection to conceive, so long will there be danger of gonorrheal ophthalmia in the newly born child.

My faith in the prophylactic power of the nitrate of silver method is so strong that I attribute all apparent negative or ill effects of the method to the presence of ante-partum infection of the eyes, to unskilled application or to improper or inert solutions.

Dauber¹ states that antagonism to Credé's method has developed in quite recent years. First, it has been shown that the method has not been carried out properly—this, of course, being no fault of the method itself; still, as gonorrheal blindness has only been reduced less than one-half, something is wrong. Midwives should be compelled to use it. The second objection is that Credé's method tends to increase eye morbidity by causing "silver catarrh." This has led to the use of argyrol and protargol. Zweifel uses the former, and neutralizes with sodium chloride. His morbidity in over 5,000 cases has been but 0.23 per cent. Scipiadès finds argyrol a certain prophylactic. From a number of other clinics come equally good reports as to protargol.

Recently in Hofmeier's clinic Credé's solution has been reduced from two per cent. to one per cent., following the custom of Runge, Fehling and Gusserow. Since this reduction the morbidity in over 5,000 cases has been but 0.33 per cent., with no silver catarrh worth mentioning. Thus while there was no dissatisfaction with Credé's method, the author concluded

¹ Münchener medizinische Wochenschrift, February 16, 1904. Hofmeier's Clinic.

to give argyrol and protargol a suitable trial. Not only were the results less favorable, but more silver catarrh was caused by Zweifel's method than by any other single procedure. Hence, at the Hofmeier clinic, Credé's one per cent. is regarded as the best prophylactic. Hofmeier also uses an ante-partum douche in his clinic, which is naturally prophylactic to ophthalmia neonatorum. Incidentally it is stated that the morbidity of this condition varied in the past with that of sepsis. When puerperal fever used to be epidemic, there was an eye morbidity of 50 per cent. at times. General asepsis, etc., brought this down to 10-12 per cent., while Credé's method has almost obliterated morbidity of the eye in individual clinics.

Wintersteiner¹ analyzes 122 cases of actual ophthalmia neonatorum. Two were undoubtedly cases of ante-partum infection. In forty others the disease did not develop until after the fifth day, and at various intervals, hence regarded as possibly of post-partum infection, although some authorities believe in delayed intra-partum causation, due to weakened virulence of germs. Credé's method is of great value within certain limits, but cannot prevail against anomalous cases, such as those of late development. To include the latter, whatever the causes, prophylaxis must be kept up through puerperium.

Wintersteiner uses Stellwag's method—potass. permanganate douching (1-1000) at short intervals, with Credé's solution twice daily. In his series of cases he obtained complete cures in every instance.

Alvarado² has been an industrious compiler of statistics, but does not always give the clinics. In one series of 6,397 cases a single drop of Credé was instilled and not a single infection followed. In a large series of over 15,000 cases about two per cent. developed the disease in spite of Credé's method. Other clinics go still higher (up to five per cent.). However, in clinics in which the solution used was but 1.5 per cent., the morbidity was much greater, running as high as 7.5 per cent., and even 12.2 per cent. As the author is a Spaniard, many if not all of his figures are probably of local origin. As for protargol, the only large figures he knows of are those of Rubesca, of Prague (morbidity of two cases in 1,100). These read well, but what are they in comparison with the old records of Leopold (3,000 cases of Credé's method without any morbidity)?

Does Credé's Method Cause Conjunctivitis?—Neither Leopold (in 3,000 cases) nor Rosthorn (in nearly 25,000 cases) ever witnessed this accident. Author cites Bischof's view that conjunctivitis never results if technic has been correct.

In regard to treatment, Alvarado sent out a circular of inquiry to colleagues (oculists) in all parts of the world as to relative merits of Credé's method on one hand and the substitution of pro-

targol, on the other. He received 31 replies, all but one in favor of Credé's. The exception was the Lyons clinic, where protargol is in use.

Ernst³ discusses Credé's method very briefly with reference to the conjunctivitis which it is said to cause. No gonococci are ever found in these cases. They are due therefore to the nitrate. He experimented with a 1.5 per cent. solution and still got the conjunctivitis. Finally he found that the one per cent. solutions were non-irritant. At the Cologne Maternity, from January 1, 1902, to July 1, 1904, this author employed the one per cent. solution in 1,111 births. Not a single case of ophthalmia developed.

RATIONAL DIET IN DISEASE.*

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SINCE the days of Hippocrates dietetics has occupied an important place in therapy. In most diseases proper feeding is more essential to the patient's welfare than the use of drugs. As Homer says, "The belly is the most important organ," and without its aid nutrition is practically impossible. To be adapted to the needs of the body, foods must be digestible, absorbable and assimilable. In gastric or intestinal diseases we should give such food as will be digested below or above the seat of the malady.

The quality of diet for the sick should be simple but faultless. Gastro-intestinal auto-intoxication is a danger that threatens with particular liability those debilitated by disease. When a certain dietary scheme is laid down for an individual it should be adhered to as closely as practicable, since "the regular use of certain classes of foods develops corresponding types of glands (Pawlow), and digestive disturbances are often set up by sudden changes in diet, owing to temporary insufficiency of the glands concerned." Within the limits of each class, however, there is always to be had an agreeable variety. With a mixed diet a person will digest a larger proportion of nutrients than with a diet composed of a single food material (Woods and Merrill). Moreover, the acid fermentation of carbohydrates checks the more serious putrefaction of proteins. To overcome pinguidity, Benedict advises limiting the patient to one viand at each meal.

As to quantity of food, the recent researches of Chittenden prove that men are well nourished on from one-half to two-thirds the total calories (3,000 or more) usually stated as required by adults. It is probable that an excess (over 60 gm. for 70 kg. body-weight) leads to more rapid metabolism, with accumulation of irritating waste products, which cause gastroenteritis and favor arteriosclerosis. Men and women who work with their muscles usually need three meals a day. For the middle-aged sedentary city-dweller two meals

¹ Wiener klinische Wochenschrift, 1904, No. 37.

² Recueil d'ophtalmol., 1904, XXVI, p. 449.

³ Centralblatt für Gynäkologie, 1904, p. 1215.

* Read before the Medical Society of the City and County of Denver, April 18, 1905.

are amply sufficient. Such a practice ensures a keen appetite and consequent normal successive secretions, eupepsia, eutrypsia, freedom from flatus and proper peristalsis. Less food is needed when a person is warmly clothed.

After a full meal the stomach should empty itself within six hours (three hours for light meals). Failure to do so shows defective motility (gastroparesis, ectasia) and calls for small feedings at frequent intervals, which are likewise indicated in hyperchlorhydria. If, on the other hand, the secretory function is feeble, it is generally best to prolong the interval between meals. The marked lowering of motor and secretory functions, together with increased tissue waste, in acute febrile diseases, indicate a special need for proteins in the most nutritious and digestible forms, and at short periods (three to five hours). Solid foods often cause vomiting or dyspeptic pains in febrile patients. For the first few days of gastric or intestinal disease, particularly appendicitis and hemorrhage, absolute abstinence from food is best. In pulmonary tuberculosis, present or impending, we should advise and direct the patient as to the necessity of ample nourishment in appetizing variety. In organic heart disease, the minimum of concentrated and easily digested food is indicated at short intervals. Cachectic conditions in general call for frequent fatty and nitrogenous feedings. The stools and urine should be closely watched, however, lest alimentation be pushed beyond the limits of digestion and assimilation.

Diet must be adapted to the sensibility of the stomach as well as to the state of secretion, motility and absorption (Hemmeter). The indications of the palate are oftener correct than not. Thorough mastication is of the utmost importance in dyspeptic cases. One needs to individualize the dietetic treatment of indigestion, particularly the nervous form, in which restriction should not be carried too far. Taking meals at short intervals prevents stagnation of bile, and thereby cholelithiasis.

The ideal temperature of food is that of the body (Uffelmann). Extremes of temperature give rise to gastric catarrh (Hutchinson) and injure the teeth. Very hot drinks may lead to ulcer. Uncooked foods are liable to convey active bacteria or parasites. Shakespeare preceded Pawlow in saying that "Good digestion waits on appetite, and health on both." This psychic relation is especially noticeable during sickness, and it explains the need of a high esthetic standard in catering to nutrition at this time. No dirt, no slops, no cold potatoes or cooked-over messes, but the very best cuisine and service which the household or hospital affords, should be provided for the sick one. The eye and the nose, as well as the palate, must be pleased. Automatic rhythm of the digestive functions is to be cultivated by the utmost punctuality as to meals. All gastric sufferers in whom neurasthenia or deficient motility is a factor should rest after meals (Hem-

meter). Children and invalids should always eat dinner about midday. In infectious conditions it is a good sanitary rule to rinse the mouth with a mild antiseptic solution (boric acid, glycerin, lemon juice) before taking food. In old age the diet should be especially light and digestible (non-fatty), in frequent small feedings, with gradual restriction of proteins. Unconscious patients can be fed slowly with a teaspoon or by the stomach tube, or with a catheter through the nostrils.

Milk.—The fat-protein-carbohydrate composition and easy digestibility (one-third the digestive energy that bread requires) of milk render its range of service the widest of all foods in sickness and invalidism. It is also an excellent excipient for the administration of irritant drugs. Many persons object to milk because it coats the tongue and makes them costive and bilious. These objections are generally overcome by gradually increasing the allowance, by the use of fruits and pleasant mouth-washes, and by skimming or diluting the milk or flavoring it with salt, baking soda, HCl, meat extracts, tea, coffee, cocoa, caramel or spices; also by the occasional substitution of broths.

Because of their greater rennin activity, young children digest milk more completely than adults (Rübner). Milk is deficient in iron (new-born infants have a hepatic accumulation), and its too prolonged exclusive use leads to anemia. Boiling milk breaks up some of the complex organic molecules, liberating H_2S from casein, and rendering the food less assimilable; so that children fed on condensed or sterilized milk are more liable to scurvy and rickets. Impure milk is a frequent cause of summer diarrhea.

Meig's method for the artificial feeding of infants is as follows: Take a quart of good, fresh milk, place in a high pitcher and allow to stand in a cool place for three hours; then pour off upper half, without shaking, and keep for use of infant. Make also a solution of milk sugar, 18 drams to a pint of water, in wide-mouth bottle and keep in cool place—not refrigerator—if it sours prepare anew. Make also lime water by putting three or four tablespoonfuls of clean, fresh-slaked lime in quart bottle, fill with clean water and shake; after an hour, pour off clean water through two or three thicknesses of muslin into another clean bottle—can make more lime water indefinitely by pouring water on sediment. Prepare food by mixing three parts of the weak cream, two of lime water and three of sugar water; warm, but do not boil, and it is ready for use. Begin feeding with this food (if necessary) when baby is two days old, giving about $\frac{1}{2}$ ounce at first every two hours; in three weeks, $2\frac{1}{4}$ ounces; at six weeks, 4 ounces—use food in same strength until baby is from six to nine months old.

The inhibitory effect of the fat of milk and eggs on gastric secretion makes these foods of special service in hypersthenic and irritative states of the stomach. Most diarrheal conditions in adults are benefited by a bland diet, largely of bread

and milk. The same is best for genito-urinary patients (Lydston) and in acute rheumatism. In nearly all skin diseases a milk diet with abundance of alkaline waters is helpful. Tuberculous patients derive most good from milk, gaining in weight and strength and unvexed by autointoxication. An exclusive milk diet enhances assimilation and diminishes the uric acid output.

The Weir Mitchell treatment of neuroses with emaciation consists in absolute rest and the administration of four ounces of milk every two hours, gradually increasing the amount and lengthening the interval to three hours, and soon adding poached eggs, chops and bread and butter. Burkart gives zwieback with 100 gm. of milk (flavored with sugar, cocoa, tea, lime water or salt) every two hours, gradually increasing the milk to two or three liters daily after a fortnight.

Pancreatized milk, one or two quarts daily, is a standard diet for typhoid fever. Junket must be made from fresh, uncooked milk. Milk is contraindicated in diseases of the small intestine (Rosenheim). Skimmed and diluted milk, buttermilk, whey and kumiss are very useful in acute nephritis and pyelitis.

Cream and butter may well supplant cod-liver oil and all proprietary emulsions. Children especially need large amounts of this milk-fat for their growing nervous system and because of their relatively greater radiation of heat. Well diluted cream is a useful substitute for milk in the digestive disorders of infants. Cream and carbohydrates, fruit, lemons and green vegetables are recommended by Vaughan in Bright's disease. Pure ice cream is soothing to a sore throat, and, when taken slowly, may be allowed in convalescence from fevers.

Fresh buttermilk (casein finely coagulated) is an ideal food for elderly people. Its laxative and antiautotoxemic effects, due to lactic acid, render great aid in relieving the obscure muscular pains of this period of life. It is also recommended in chronic gastroenteritis. Cottage cheese and the Swiss cheeses, containing hardly any purin bodies, are useful (Haig) in the "uric acid diathesis."

Eggs.—The eggs of fowls are very rich in fats (2 per cent. in white and 30 per cent. in yolk) and proteins (12 per cent. in white, 15 per cent. in yolk), hence are called for in nearly every cachectic condition. As part of the home treatment of pulmonary tuberculosis, Osler has advised giving 24 raw eggs daily. The organic sulphur and phosphorus (over one per cent. in yolk) of eggs quickly separate as offensive gaseous products, and eggs for the use of invalids should be "just dropped" if possible. Eggs are best cooked slowly at 160° to 180° F. Boiling hard or frying retards their digestion to double the norm. Raw eggs can be made more palatable by salting, peppering or spicing with nutmeg or other condiments, or by beating them up with broth or whiskey and sugar, or sherry or brandy. Eggs may also be beaten with boiling water and strained

and dropped into consommé, light broth or gruel (Thompson).

Weakly children a year or more old are helped by eating daily from one to three soft-cooked eggs. The relatively large content of lime adds to their value in rickets. In diarrheal and febrile complaints the white of an egg may be beaten up with half a glass of water and pleasantly flavored, to be used as a drink. In feeding young infants Dr. A. E. Grant has suggested the use of a medicine dropper for conveying to the throat a mixture of equal parts of egg albumin and water. A solution of egg-white flavored with meat extract is a good substitute for beef juice (Pattee). Swallowed directly from the shell, eggs are soothing to an irritable larynx.

Following hematemesis or the violent pains of gastric ulcer, Einhorn feeds by the rectum for five days with a glass of warm milk in which a raw egg has been well beaten and a pinch of salt added—or a cupful of warm water containing a tablespoonful of a good albumose. If the gastric HCl is lacking in fevers, it may be added (up to 3.5 per cent. of dilute acid) to the ingested milk and eggs. The yolk cure is recommended by Stern in diabetes. He gives 10 to 40 yolks a day, boiled or in coffee, egg-nog, salad dressings, celery and cauliflower soups, etc. Custards composed largely of eggs are useful adjuncts to a convalescent dietary (Thompson). Eggs are contraindicated in flatulent dyspepsia or any serious gastric derangement and in severe acute or chronic nephritis.

Meats.—Animal proteins are more digestible than vegetable proteins, but they contain more extractives (one-third the N of beef) related to and convertible into uric acid and allied bodies. Red meats are no worse than white meats in gouty conditions. Young meats, though tender, are relatively indigestible and prone to putrefaction. Chicken, young pigeon and game are easily digested. Salt, smoked and pickled meats and most pork are generally contraindicated for the sick and infirm. Crisp breakfast bacon, however, is digestible as well as nutritious. The valetudinarian poet Horace used to find his dish of bacon and greens excellent in all ways.

Meats increase and vegetables diminish arterial tension in arteriosclerosis. Meats are especially indicated in anemias and chlorosis. Lean meat should form the basis of diet in obesity. A meat diet and constipation favor the multiplication of colon bacilli and appendicitis (Benedict), but surgeons, preparatory to abdominal operations, are coming to favor a meat diet for the flat gut it gives. The glandular portions of animals should be prohibited in goutiness, diabetes and nephritis.

The preparation of meats has much to do with their fitness for sick people. Steak that is broiled or finely divided will agree with a feeble digestion where fried meat would disagree. Ground boiled or roasted beef, heated in the oven on pieces of thin toast, or ground raw round steak

baked after stirring with eggs and crackers, is a good thing in atonic conditions of the stomach. Cold storage meats, particularly poultry, have always about them the possible dangers of ptomain poisoning.

The pleasant flavor and appetizing effect of bouillons depend largely on the muscle extractive creatin. Aromatic herbs are often added as a savor. These meat broths, aside from the contained gelatin (best extracted by long, slow cooking) and any cereal or egg additions, possess no nutritive value, favor the virulence of colon bacilli and are definitely contraindicated in goutiness and migraine. Boas recommends a soup diet for eight or ten days in proctitis and fissured rectum. Well-spiced broths are useful to "brace up" with after a spree. Rich gravies are almost never in order, but the fresh juice of broiled steak, with bread crumbs, is very good for young children with digestive disorders. Meat juice contains about 6 per cent. of proteids. It is objectionable because of the possibility of bacterial and parasitic contamination. Gelatin jellies, agreeably flavored and served ice-cold, with or without cream, are of special service in febrile diseases, since gelatin is a tissue-saver, having about one-third the caloric value of albumin. Gelatin may also be given with eggs or milk as blanc mange. The calcium-content of gelatin probably accounts for whatever beneficial effect it may have in gastrointestinal hemorrhages, scurvy, purpura and aneurism.

Zomotherapy (raw beef scraped to a fine pulp and served with salt and pepper or covered with a layer of grated chocolate) has advocates in the dietetic treatment of pulmonary tuberculosis. They claim that the distaste for raw meat is soon overcome, and that the danger from parasites in properly selected meat is of little relative import. Scraped beef sandwiches are useful in convalescence from fevers. Albumoses (best given in soups or purees) are of service in marked motor insufficiency of the stomach.

Fish.—The flesh of fresh lean fish ranks first in digestibility, particularly trout and whiting (Pavy). Fatty dark-flesh fish (salmon, mackerel, herring, eel) are rather difficult of digestion. Salted fish are often a useful addition to the diet in cases of hypochlorhydria. Fish decomposes rapidly, and when canned is liable to give rise to ptomain poisoning, especially if the can has been opened a day or two. The alkaline juice of fish may be neutralized with lemon juice or vinegar. In general, fish may be used as a substitute for meats when the latter are contraindicated.

Oyster (14 per cent. proteins, 15 per cent. fat) and clam broths made with milk are pleasant, digestible and nutritious foods in acute fevers, particularly grippal attacks. The soft part (liver) of the oyster is most easily digested raw, since the accompanying juice contains a diastatic ferment. Clam juice may be tried in the vomiting of pregnancy (Thompson). Crabs, lob-

sters and shrimps frequently excite urticaria and other signs of autointoxication, partly because they are scavengers by nature.

Fats and Oils.—These stimulate the pancreatic and biliary secretions, but tend to inhibit the secretion of gastric juice. Hence they are indicated in hyperchlorhydric, and contraindicated in hypochlorhydric conditions, and in jaundice, lithemia and skin disorders. They are not usually well borne in acute diseases.

Animal oils and fats are generally more digestible than the vegetable, whereas the mineral cannot be utilized at all by the body. Hot fats are more indigestible than cold. When closely incorporated with connective tissue, as in ham, fat is very refractory to digestion. Foods fried in grease develop irritating fatty acids and are not to be eaten by persons with feeble digestive powers. Graham and oatmeal crackers are rich in fat. Olives are about one-fourth oil.

Because of their tissue-saving value, oils and fats rank highest in the dietaries of most chronic wasting conditions, particularly pulmonary tuberculosis, and in convalescence from acute diseases. Strumous and rickety children should be induced in every way to take butter, cream, bacon fat, olive oil and bone marrow. Fats and oils are generally laxative, but good fats, even in large quantity, are usually well borne in chronic diarrheas (Boas). Taken in excess of the needs of the system, fat is stored as adipose tissue.

In diabetes mellitus the glycosuria and emaciation are best controlled by a diet rich in fats and proteins. Saratoga chips (little starch and much fat) are recommended by Thompson in diabetes. Kleen's diabetic diet consists in restriction of carbohydrates to 60-100 gm. daily, or exclusion from the diet for two to four weeks several times a year (except in severe cases), making up the deficiency with fats (butter), proteids (except milk, cheese and liver), green vegetables and alcohol. The oatmeal cure of Von Noorden may be tried in severe obstinate cases of diabetic acidosis. The patient is fed exclusively on oatmeal gruel, each day's ration consisting of 250 gm. oat flour, 250-300 gm. butter and 100 gm. roborat or other vegetable albumin (or white of eggs may be added after cooling), the mixture being prepared as soup and given at intervals of two hours.

Bone marrow is quite rich in fat, and consumptives do well to partake of it freely. According to Holt, artificial foods for infants contain too much sugar and too little fat, with consequent late teeth, soft bones and flabby muscles. At least 25 gm. of fat can be introduced daily by inunction (Benedict).

Cereals.—The breadstuffs are the principal foods of the human race. They require, however, more proteolytic units than meats, and an exceptionally high amylolytic power. Wheat bread is the most digestible form, and whole wheat bread is generally preferable as containing more proteins (12.2 per cent., as compared with

8.8 per cent. in white) and phosphates, the gluten layer being just beneath the cellulose husk. Macaroni is half again (16 to 18 per cent.) as rich in gluten as wheat bread, and when well cooked is a good substitute for meat.

Bread for invalids should be at least a day old, or, better, dextrinized into thin toast or zwieback. Plain and salt crackers are excellent in atonic dyspepsia, and are rendered more palatable by heating in the oven. Biscuits, pastries and puddings (except plain farinaceous) are to be avoided by persons with weak digestion. Pancakes lead to acne, and carbohydrates in general favor furunculosis. Gluten breads are deceptive in diabetes, since the best of them contain more starch than potatoes do. Oatmeal is very nutritious and may take the place of meats in persons with strong digestion. Like buckwheat, it contains much cellulose. Maize mush and milk is a good old-fashioned combination much neglected nowadays. Corn has specially harsh seed-coats, but the white part of popped corn is a very delicate and digestible form of starch and protein (Benedict).

The rye and graham breads owe their laxative action to the indigestible cellulose. In this connection, Dr. William H. Buchtel has employed for forty years in treating constipation, a half cup of bran steeped with water to the brim for twenty minutes, then the water is poured off and the bran is served for breakfast with cream or orange juice. Cereals containing husk and gritty particles are to be avoided when there is a tendency to gastric stagnation.

Ground barley and rice are particularly bland (little cellulose) foods when well cooked (best strained), and are most useful in the digestive complaints of infants and children. Rice is well flavored with the juice of steak or with butter. Barley is used largely for thickening soups. Infantile colic can often be prevented by giving before each nursing a tablespoonful of thin gruel. Corn and rice meals are less liable to become sticky than wheat flour, and so are preferred for muffins, waffles, gems and pancakes.

To make dextrinized gruels Chapin directs to beat up one or two heaping tablespoonfuls of barley, wheat or rice flour, or two to four heaping tablespoonfuls of rolled oats, with enough cold water to make a thin paste. Pour on a quart of boiling water, and boil at least fifteen minutes in a covered double boiler. Place cooker in cold water, and when gruel is cool enough to be tasted add a teaspoonful of diastase solution, and stir; strain, salt and cool. These gruels serve admirably as temporary milk substitutes in the gastroenteritis of bottle-fed infants and young children.

The dextrinized package foods are nearly all to be recommended, according to individual likings, to convalescents and the subjects of most chronic diseases. Served with or without sugar and an abundance of cream, they are very nutritious and easily digested.

Vegetables.—Many tubers are used as food, because of their starchy composition (potatoes, 20 per cent.). Baking potatoes renders them much more digestible, the heat of the oven being about double that of boiling water. Potatoes, like most coarse vegetables, on account of their water (90 per cent. in turnips and cabbages) and woody fiber, are prone to fermentation, and must be avoided in amylaceous dyspepsia and in cardiac troubles. Sweet potatoes are less suitable for the sickly than the Irish variety.

Vegetable proteids are less than half digested (Brubaker), because of their combination with cellulose. The legumes are rich in proteins, but are peculiarly indigestible, and are best given hulled (cellulose in seed-coats) or in a finely divided state. Legumin also liberates much H_2S in the bowel. In uricacidemic conditions with active digestive powers, they may replace meats. Bean flour (10 per cent.) added to wheat flour makes a very nutritious bread. Peanuts are nearly half oil.

The so-called green vegetables are relatively innutritious (below 5 per cent.) but are rich in iron (spinach has 35 mgm. per 100 gm.) and potassium salts, hence are useful in anemia and scurvy. They should be young and fresh, as on drying they become stringy and tasteless. They are best served in the form of purees. Their absorption as a rule is quite incomplete. In the form of salads (not for dyspeptics) they promote the appetite and the digestion of more nutritious foods. Along with acid fruits, they should form the basis of diet for gall-stones. Celery cooked in milk is wholesome and digestible; asparagus is easily digested; spinach and rhubarb have a laxative action. Cabbage is seldom allowable, but well cooked cauliflower can be taken even by delicate children. The calcium oxalate of rhubarb, spinach, asparagus and tomatoes contraindicates the use of these vegetables in oxaluria and the closely related lithuria.

Arrowroot furnishes a very pure starch, serviceable in gruels, puddings and blanc mange whenever a bland diet is needed, as in diarrheal complaints. This or baked flour may be added to milk. Sago and tapioca are similar to arrowroot. All starchy and saccharine foods, by fermenting to lactic acid, predispose to rickets. Carrots and parsnips are seldom indicated in the sick dietary. The pectin in the outer layers of the carrot serves as a flavoring agent. Radishes may be used as a relish with bread and butter for persons who are not subject to flatulence. The sugar of beets (10 to 30 per cent.) and carrots and the acids of rhubarb, pickles and tomatoes contraindicate their use in gouty conditions. Cucumbers are very indigestible, particularly the seeds. Tomatoes retain their flavor well, and tomato soup is a good means of giving milk to some persons. The sulphur constituents of onions, cabbages and turnips are generally obnoxious to persons of weak digestive powers.

Only soft, tender vegetables and well-strained

purees should be given to subjects of subacidity and anacidity. Most vegetables, sugars and the seeds of fruits are to be avoided in colitis (Boas), but they are useful in simple constipation. Vegetable soups unduly distend the stomach and increase cardiac labor in diseases of these organs. Fungi (mushrooms, truffles, morels) have no place in an invalid dietary.

Fruits.—The organic acids (malic, citric, tartaric) and their salts (K, Na, Ca, Fe) in ripe fruits serve as appetizers and secretory and excretory excitants. The flavor and odor are due to essential oils and compound ethers. The water (75 to 85 per cent.), cellulose, pectin and colloidal sugars promote peristalsis, particularly when taken on an empty stomach, that is, before breakfast. Stewed and baked fruits are more digestible than raw ones. To correct the acidity that causes flatulence, Yeo advises adding a teaspoonful of baking soda to each pound of cooked fruit. Fruits have an alkalizing effect on the blood and urine.

The levulose and mannose of fruits are comparatively readily oxidized, hence fruits are not contraindicated in diabetes. Fruit juices (orange, lemon, pineapple), diluted and given cold, are very grateful in fevers. Scraped apple, mashed potato and fresh fruit juices are curative in scurvy, perhaps by counteracting the mineral acid intoxication on which this dyscrasia is said to depend. It is essential that fruits should be neither unripe (acids and starches) nor overripe, either condition giving rise to bowel disturbance. Fruits are contraindicated in catarrhal conditions of the stomach or intestines, though for diarrhea Ewald recommends a laxative mixture of one part of figs and two parts of prunes. On account of their seeds, berries are best taken with bread. Bananas contain about as much starch (changed partly to sugar as fruit ripens) as potatoes; if used at all, they should be baked as potatoes are. Banana flour (made into a thin gruel or porridge) is recommended (Thompson) as suitable in cases of gastric irritability. Strawberries may give rise to erythema, urticaria or dermatitis. Cranberries, well cooked and sugared and passed through a colander, are a serviceable appetizer, as is likewise a good orange marmalade. Currants and citrons are wholly indigestible (Thompson). Pineapple juice contains a valuable proteolytic ferment (bromelin). Dried dates and figs contain 60 per cent. sugar and 6 per cent. protein, and are therefore very nutritious. Plums, peaches, apricots and raspberries contain the least sugar; apples, cherries, grapes and pears the most. A quantity of apples, peel and all, will check biliary diarrhea (Fothergill). As a preventive of infection, fresh fruit should be washed before eating.

Nuts are rich in oil (mostly 50 to 70 per cent.), and so are very nutritious, but, because of their cellulose, need to be well masticated (better, ground) to insure eutrypsia. They are probably best taken about two hours after meals,

when they may pass almost directly into the duodenum. Almond and cocoanut bread and cakes are recommended in diabetes. Chestnuts contain ten times as much carbohydrates (70 per cent.) as of fat; walnuts, much fat and protein. Nuts full of oil all contain 15 to 20 per cent. proteins, except cocoanuts (6 per cent); pecans and chestnuts (10 per cent.).

Condiments.—Common salt is believed to be the source of the gastric HCl, hence is indicated in hypochlorhydria, although its primary effect (Pawlow) is inhibitory to the secretion of the acid. In ordinary asthenic dyspepsia salted crackers and salt fish are often beneficial. A lack of food salt leads to malnutrition; overdoses are irritant and cause diarrhea and diminish the solubility of urates in the blood. In edema and transudations the salt accompanies the fluid into the tissues and serous cavities, five gm. of salt holding a kg. of water here (Javal). For this reason dropsical conditions (especially renal) and effusions in general should be treated dietetically by dechloridation, as with a milk and rice diet. Common salt is contraindicated in epilepsy, and may be substituted here, even in bread, by sodium bromide. Salt and lime (eggs) are especially indicated in scrofulous conditions. Sugar is a prime source of heat and energy, excess being stored as adipose tissue. On account of its tendency to ferment, with production of acids and gases, and to cloy the appetite and impair digestion by depriving the glands of their water, it is best taken sparingly and at the close of meals. Glucose ferments most readily, lactose, least. An acid weak sugar solution (grape juice) is a nourishing drink in acute febrile disorders. When flatulence troubles, cream or lemon juice may be used on gruels in lieu of sugar. Sweets are to be restricted in gouty and rheumatic persons, since they are more oxidizable than proteids, which are thus insufficiently oxidized (Reed). Molasses is a good laxative for children when it agrees in other respects. Saccharin is often substituted for sugar in diabetes as a sweetening agent, but if long continued produces digestive disturbances.

The volatile oils and oleoresins of spices serve as psychic stimulants to digestive secretion and absorption (Boas), and have further some counterirritating reflex stimulating effects. They are particularly helpful in sub- and anacidity and in the atonic conditions of advancing age. They are distinctly contraindicated in irritative (hyperchlorhydric) and inflammatory conditions of the gastrointestinal and urinary mucous membranes and (along with tea, coffee, alcohol, sweets, pastries, pancakes, cheese, sausage, pickles and fried foods) in diseases of the skin and the heart. The choice of condiment is mainly a matter of individual taste; capsicum is about the most reliable, and is of special service in dipsomania. For children, cinnamon, ginger and vanilla are recommended. A skilful use of condiments (ginger ale, etc.) may obviate the necessity of alcoholic stimulation (Thompson). Vinegar has

rational use in salads, since it softens the cellulose of vegetables as well as muscle fiber.

Beverages.—Next to air, water is most immediately requisite to bodily functions, and is especially indicated in fevers to eliminate toxins. The average healthy adult requires three or four pints daily, in addition to that (50 to 60 per cent.) contained in solid foods. Cool water slows the pulse, raises blood pressure and stimulates peristalsis; warm water has the opposite effects (Baruch). Very hot water quenches thirst better than cold. Carbonated water is a gastric stimulant. Water is best drunk chiefly between meals, so as not to overload the stomach and unduly dilute the digestive juices.

Free water-drinking is very beneficial in thick-blooded melancholia, in constipation and in the obscure aches and pains of goutiness and mal-assimilation. It is the most important medical consideration in gall-stone trouble. It is urgently needed after severe hemorrhage, and massive serious discharges from the bowel. In order to ensure the drinking of a certain quantity (say a glass of water every two hours), it is often advisable to direct the patient to dissolve some harmless effervescent tablet in a whole glass of the liquid before taking. Hot water and hot diluent drinks (cream of tartar lemonade) are indicated in acute Bright's disease. Hot water on an empty stomach is of service in cholelithiasis and in mucous gastritis; cool water, in hyperchlorhydria. For obvious mechanical reasons, a relatively dry diet is to be recommended to sufferers from cardiac valvular and muscular disease with dropsy and other signs of incompensation, and in aneurism, ascites and pleural effusions. Much liquid by the mouth at or near meals is to be avoided in motor defects of the stomach (hyperkinesis, gastroparesis, pyloric obstruction, ectasia) and in nervous flatulence, obesity and asthma. In the last two or three months of pregnancy a diet restricted in fluids and carbohydrates lessens the size of the child without otherwise influencing its development (Friedenwald and Ruhräh). Manges recommends giving water cold (reflex diuretic effect) and in frequent small quantities in acute infectious and septic conditions. Ice produces dryness of the tongue by the action of cold, and glossitis and buccal erythema by thermal reaction. Large quantities of ice cream or ice water have caused sudden death, probably by reflex inhibition through the pneumogastric.

Tart lemonade is an excellent beverage in gouty and rheumatic states (citric acid being converted into carbonates, which render the blood more alkaline), and is a pleasant medium for taking alkaline salts. Hot lemonade, like other hot drinks, favors diuresis and diaphoresis, and thus the elimination of toxic products in coryza, grippe, etc. Sulphuric acid (15 m. to the tumblersful) lemonade is used as a prophylactic of plumbism.

The alkaloidal beverages (tea, coffee, cocoa, chocolate, kola) have as their active ingredients

(caffeine or theine and theobromine) substances closely related to uric acid. They also contain considerable astringent (constipating) tannin (13 per cent. in green tea), which is extracted by long boiling and which is said to stay hunger. In black tea the tannin is rendered less soluble by fermentation. Cocoa is really nourishing, being nearly half fat and one-eighth proteins, and, when well borne by the digestive organs, should be drunk freely by thin and weakly subjects. Tea is an efficient gastric sedative in migrainous attacks and in opium sickness. Chocolate contains about 60 per cent. sugar, and is hence quite fattening. Because of the contained theobromine, chocolate or cocoa is an excellent diuretic drink in kidney troubles. Coffee is a cerebral and vasomotor stimulant, useful in collapse and in headaches with low vascular tension, in alcoholism and for opium coma (best given through colon tube). Tea and coffee are contraindicated in all states of nervous erethism, as exophthalmic goiter, and in irritable heart from any cause. They diminish proteolytic digestion in the stomach by one-third (Schultz). The cereal substitutes for coffee are to be recommended whenever hot water is in order.

The value of alcoholic liquors in diseased conditions is a much debated question. Alcohol is a tissue-saver (1 gm. equal 0.071 calorie), being burned in the capillaries to the extent of about two ounces daily. It would seem, therefore, to have some use in wasting fevers (hyperpyrexia, weak heart, low arterial pressure), tuberculous or otherwise, but it is readily abused and should be prescribed with as much care as other drugs. Over 5 per cent. of alcohol in the food tends to inhibit digestion.

The habituation of the patient to alcoholics renders their administration more necessary in acute conditions. Aged persons also bear such stimulants comparatively well. The average daily allowance for sick adults ought not to exceed four to eight ounces of pure whisky or brandy. The administration of spirits should be curtailed when they cause excitement or other mental symptoms, or when the odor can be noticed on the breath. Alcoholic liquors are generally undesirable in gastro-intestinal diseases, affecting the liver most injuriously. The acids of wines and fermented liquors have an irritant effect and make mucous conditions worse (Reed).

Chronic diseases and cachexias are seldom benefited by alcoholic beverages, and there is great danger of inebriety being superadded to the disease. Malt liquors favor the putting on of fat, partly from the contained carbohydrates and partly because of imperfect oxidation and elimination. The galactagogue effect of beer, ale, porter or stout is not to be compared with that of broths and cereal gruels. Malt liquors are contraindicated in gout, obesity, diabetes and urinary diseases (Friedenwald and Ruhräh).

Claret or cognac in water may prove of service in acute diarrheas (Boas). Whisky is some-

times laxative. White wines are more stimulating than red, since, containing no tannin, they are absorbed more promptly. Effervescent beverages, by distending the stomach, are hurtful in heart disease. A cup of hot milk, broth, punch or toddy at bedtime may overcome simple insomnia.

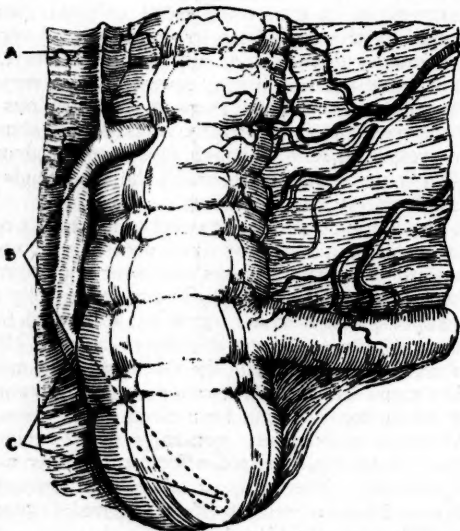
AN APPENDECTOMY WITH AN UNCOMMON LOCATION OF THE APPENDIX AND INVOLVING A MODIFICATION OF THE INTER-MUSCULAR INCISION.

BY ALFRED S. TAYLOR, M.D.,
OF NEW YORK.

THE patient, Sam'l C., seventeen years old, was operated upon in the surgical service at Randall's Island Hospital May 24, 1905. The history preceding operation presented no features of special interest, and operation was done while no acute inflammation was present. The interest of the case lies in the uncommon location of the appendix.

The peritoneal cavity was entered by means of the intermuscular incision, the cecum was with some difficulty pulled into the wound, and by following two of its longitudinal bands to their junction the base of the appendix was

Fig. 1.



Schematic.—a. Peritoneal fold running upward from meso-appendix toward liver; b. Retroperitoneal portion of appendix; c. Retrocecal portion of appendix.

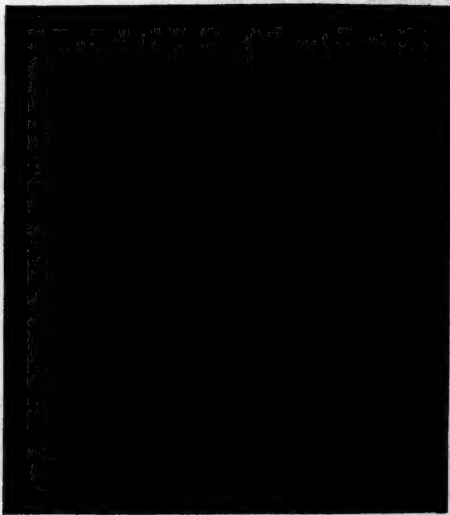
readily identified and caught with a clamp. (Fig. 2.)

Only a half centimeter of the appendix could be seen, as it seemed to pass immediately behind the peritoneum and cecum. A finger passed to the inner side of the cecum could not detect the distal portion of the appendix, but when passed upward along the outer side of the cecum, felt the clubbed curved tip of the appendix nearly

7 cm. above the upper edge of the incision. This clubbed end for about 2.5 cm. was free in the peritoneal cavity with a meso-appendix from which a fold of parietal peritoneum ran upward toward the liver. The middle portion seemed to be retroperitoneal, and the proximal portion retrocecal (Fig. 1).

The peritoneum was divided at the base of the appendix and an attempt made to enucleate

Fig. 2.



a. Tenth intercostal nerve; b. External oblique aponeurosis; c. Internal oblique and transversalis muscles; d. Clamp on base of appendix.

the appendix with the finger. The retrocecal portion was readily freed, but it soon became evident that the upper portions could not be dealt with by this method, which was blind and did not give sufficient control of any hemorrhage that might occur.

The patient's muscles were very well developed, and traction upward did not expose the necessary field.

Neither Weir's enlargement of the intermuscular incision, nor Kämmerer's incision through the rectus abdominis would give space where it was most needed, at the outer side of the ascending colon. To add the old-fashioned oblique incision through all the layers to the intermuscular incision already made would make a wound which would most likely lead to ventral hernia later.

At this moment the idea suggested itself that a second intermuscular incision at the level of the tip of the appendix would answer the demands of the case admirably. Therefore the incision was continued upward through the skin and external oblique muscle and a second intermuscular entrance to the peritoneal cavity made at the level of the tip of the appendix (Fig. 2).

The mesentery of the free portion was readily ligated and divided. The middle, or retroperi-

toneal, portion was pulled forward to make an artificial meso-appendix, which was then tied off and divided, thus practically suturing the parietal peritoneum beneath the appendix. The appendix was then passed from above downward behind the cecum, where it had already been liberated, and delivered through the lower wound. The appendix was removed and the stump inverted.

The wounds were closed by layer sutures. The patient made an uninterrupted recovery with primary union throughout.

This technic proved to be rapid, was very satisfactory, in that it gave a perfect view of the operative field, and left the patient with an intact abdominal wall.

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THE AMERICAN DISEASE: AN INTERPRETATION.¹

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MEDICAL nomenclature, certainly as regards names for many diseases, stands to-day the most neglected, the most incongruous, the least rational and the least progressive of all the minor divisions of the subject. Many of those most familiar justify a continued existence solely through the fallacious law of traditional custom. In some instances, both name and disease being inelastic—typhoid fever or epilepsy, for example—no special harm is done. In others, as hysteria and chorea, we continue to insult intelligence apparently without either consciousness of shame or hope or desire for reform. There is something of promise in the tuberculosis of to-day rather than the consumption of our fathers, but much remains to be done, the work having scarcely begun. The field of neurology, perhaps, more than any other, needs the scythe and pruning hook. The latter instrument could, in my judgment, be used with particularly beneficial effect if employed vigorously and with discriminating judgment in neurological nosology. Its first work, if in my hands, would be to clip and trim and shape into at least some semblance of definite form and substance that phantom, once a tree, now a forest and rapidly becoming a wilderness, so rank and riotous is its growth, neurasthenia. No shorter road to nervous prostration exists than along the route of present interpretation and mental comprehension of the term as generally understood or misunderstood. I confess to an antipathy—I think rational, though amounting to almost an obsession—for the word. Originally intended to possess a definite significance, its field of application has been so elaborated and broadened and abused that to-day it means almost anything and with equal truth almost nothing. The inspiration which gave it birth marked the genius, but the child has grown

a monster, fattening upon the flesh of hundreds of brothers and sisters, and even its cousins. It is still from custom classed among the neuroses or psychoneuroses, and thus the special property of the neurologist, but like its twin sister—the only sister left, by the way—hysteria, it has wandered afar with an omnivorous appetite, and is known to-day and claimed in some one of its hydra-headed forms in every field of medicine. To the stomach specialists belong the gastric and lithemic types, to the surgeon the postoperative and some of the traumatic cases. The sexual neurasthenic is the property of the genito-urinary specialists, the reflex cases are almost equally distributed to those who know the eye, the ear, the nose and throat, while the neurologists divide the remainder with the gynecologists, or play battledore or shuttlecock with all. The general practitioner alone is counted an invader in this field, and he, wise man that he is, with appreciative philosophy, rarely feels himself aggrieved.

My criticism is not of the term etymologically. On the contrary, properly restricted in interpretation, it is an excellent example of word-making. It should stand, however, for either fish, flesh or fowl—for a definite entity or syndrome—if retained in our nosology. If discarded in this field, by all means keep it, but restrict it to the broad descriptive significance of a generic term alone. I am not yet willing to accept the dictum embodied in the recent paper of an eminent American writer who, with a stroke of the pen, announces the passing of neurasthenia, for which he would substitute a group of pure psychoses, if for no other reason than that he leaves us none the better off for such a begging of the question; and yet one is almost tempted to let it pass away into final oblivion and without a protest on reading a serious thesis by another recent writer upon neurasthenia in babes. If it is to continue a neurological and general medical waste-basket into which we are to dump all forms and degrees of illness associated with irritable nervous weakness to which we cannot attach a standard label, then it cannot be lost too quickly. It means to-day to the student mind mystery, confusion, chaos and correlated aversion, curiously mixed with a contradictory fascination; to the patient it has become a term full of suspicion; to the medical teacher it is a term of reproach. No observation or experience during my fifteen years of postgraduate teaching has been more emphasized than this attitude of mind of the student body. Year after year and many times a year, the cry has been the same from all my classes: "What is neurasthenia?" I think you will agree with me that something should be done. The solution of the problem to me seems relatively simple. Let us stop running after strange gods and the making of false idols and return to the worship of our fathers and to one faith. There is a nervous affection—the very same which originally inspired Dr. Beard to coin the word, with a broadly constant symptom picture, a more constant etiology,

¹ The Address in Medicine read before the Ontario Medical Association, June, 1905.

a conjectural pathology, a fairly certain prognosis and a definite plan, in principles at least, of treatment, the chief and essential symptomatic manifestation of which is an irritable, quick exhaustion of nervous function in many or all directions. It has become almost lost, it has suffered degradation, it has fallen from the genus to the species in the literature of the subject, not so much through intrinsic conditions, but because of the confusion and chaos of interpretation. The dignity and importance of this subtype, its rapid and progressive increase, the charm and fascination of its study and of its remedial and curative treatment are such as justify and, indeed, demand that it be taken from this chaotic mass and be given a distinct identity. Let *this* be neurasthenia. We shall simply give back to Cæsar what was his—lost property to the original owner. It is but the restoration of a birthright. How the thief will cover his nakedness is his problem, not ours.

I have but borrowed for a purpose my title, and having explained my motive, I discard it. And yet it is not altogether bad. That it has the ring of cheap sensationalism is a just criticism, though nothing was further from my mind, a disavowal which I hope has been anticipated and is accepted. In much that the condition that I have in mind represents, in much that is peculiar to this affection—to neurasthenia—the term, the American disease, is both accurate and appropriate. As I conceive it, it is an American disease indigenous to this soil and essentially a product of causative conditions peculiar to this country. That it now exists elsewhere, and probably always did in sporadic form I do not doubt, but this is its home, this its soil, this the atmosphere in which it luxuriates. What is this disease? What are its symptoms? How differentiate it? What is its etiology and prognosis, and how is it to be treated? My limit of time will permit me to create the scheme of the picture only, but if the viewpoint be the proper one and the perspective liberal in breadth any one of my audience will, I am sure, be able to do the filling in. I would count my work well done and a good end accomplished if I did no more than infect you with the enthusiastic interest with which the subject inspires me. In the effort to do so I shall create part of the perspective referred to. First as to your material: Neurasthenia never occurs in fools. The idea constitutes a paradox. Neurasthenia may make a fool, but you cannot make a fool a neurasthenic. It is a disease of bright intellects, its victims are leaders and masters of men, each one a captain of industry. Each case is unique as a study if you are to study helpfully. There are no arbitrary limits to the horizon of studious effort. The political history of the world has been made largely by paranoiacs. Mahomet, Peter the Hermit and Oliver Cromwell are examples in point, to go back no farther. In each there was an imperative and an impelling monomania. The world of literature, of art and of science, of fruitful endeavor in all higher fields,

is indebted in an analogous degree to the neurasthenic, analogously endowed with an imperative and an impelling energy. Dr. Gould's list includes such names as Carlyle, Wagner, Huxley, Spencer and many others. The confidence, the faith of patients of this type, is to be classed as an inspiring stimulus in itself and is well worth the struggle to grasp understandingly this subject. That yours is the helping hand depended upon by such men—such giants—whom you may lead as little children; the knowledge that you, and sometimes you alone, may bring back into the world's arena of action and into the old supremacy, such factors in the world's work, represents to my mind an objective, a purpose, a sphere of usefulness second to none of the many laudable ambitions along the highest planes of medicine.

In painting the clinical picture it would mar my scheme to paint an individual likeness. I shall give you first the basis for a composite photograph, made up of the case histories of fifty selected patients from private practice. Forty-two of these were American born, the remainder, 8, with two exceptions, had been residents more than fifteen years; 22 were from New York City, 4 from Connecticut, 3 from Massachusetts, 5 from Pennsylvania, 2 from New Jersey, 5 from as many different Southern States, 1 from Canada, and the remaining 8 from as many different sections. Forty-three were from cities of more than 100,000 inhabitants, although only 21 were city born. The average age was thirty-seven years, the oldest sixty-two, the youngest twenty-six. Without a single exception all were brain workers. Sixteen of these fifty had been makers of history in different spheres, some large, some small; mercantile, literary, religious, scientific, political or economic. Two of the number were among the hundred captains of industry assembled in a list made to commemorate a national function celebrated a few years ago. By occupation 13 were financiers, in multiple mercantile lines, really better described as promoters; 6 were lawyers, 3 clergymen, 2 merchants, 5 physicians, 5 brokers, 4 school teachers. Of the remaining twelve, 2 were professional politicians, 2 corporation officials, and 4 managers of large industrial plants. Four of the fifty were men of independent, self-acquired means, who described themselves as having no occupation at the time of record. They have been included in the groups mentioned according to previous occupation. Four of this series were women, 1 a journalist, 1 an actress, and 2 of them teachers. Fourteen of the fifty were unmarried, the age average of this series of fourteen being relatively high, forty-four years. The four females were all childless, though two of them were married.

Instead of an analytical elaboration of individual symptoms, let me give you a standard clinical history selected from the series of fifty as a type portrait.

M., aged thirty-three, male, born of healthy good stock, American parentage, the only handi-

cap being parental poverty. Driven by necessity and by that subtle factor, temperament, to early effort in extraordinary degree, he acquired the strenuous, ambitious, high tension, keenly sensitive habit. He could not afford a liberal or broadening education because his own dollars paid for it. At nineteen he was in business as apprentice in a large establishment manufacturing mechanical engineering appliances. At twenty-six, with a capital of \$500, he organized a company, had it incorporated, was president, secretary, treasurer, superintendent, salesman and chief stockholder, entering into competition with established and lavishly capitalized rival corporations. Awake at 7 o'clock, he hurried through breakfast a few minutes later, mixing an omelet with an order or a countermand, assimilable sometimes with the former, always incompatible with the latter; taking in with his coffee the London market or the Paris bourse, dividing the steam supply between brain and stomach when it should have been all turned on at the point of physiological demand. A hurried walk to the train, possibly a delusional constitutional in this very walk, the steam being still turned on to the top floor. In the office a pile of mail, interviews with clerks, orders, directions, instructions, detail work in every department. Just here *en passant* is laid the immediate foundation of the breakdown. It is the man of detail, the man great in everything except the qualities which make the general, who becomes the neurasthenic. It is the crime of attending to minutiae which makes the nervous derelict. The general is never a neurasthenic. It is the one flaw in the statue of true greatness. That quality, the highest, which helps us to select our lieutenants, is always lacking. The neurasthenic is the archetype of the Pooh-bah. He is not only general, but also colonel, major, captain and private. The penalty is inevitable. No man can do the work of four along higher lines without paying for it.

After four hours in the office this man goes to lunch, tired, nervous and with preoccupied mind. He takes his secretary or manager, and again the attempt is made to mix a steak or an omelet with a business problem. The steam is still turned on at the top, our patient eats fast and drinks a lot of water or other fluid, prematurely flushing the contents of the stomach into the intestine. Already by nervous inhibition he has interfered with biliary and other secretions. The intestine, the duodenum, cannot take care of the albumenoids—the proteids—properly. It cannot take care of its own. The alkaline reaction of duodenal secretion has been upset by the flushed overflow of acid gastric juice, the secretion of bile has been inhibited by the state of mental tension and the diversion of energizing agencies from digestive viscera to brain. Fermentative decomposition with resulting ptomain and toxin formation follows, deficient nutritional assimilation plus chemical irritation are added to cell fatigue along a routine line without rotation.

Notices of protest begin to come into first sub-conscious recognition, but are disregarded. They may come from any one or many sources. Headache of the cincture or helmet type, vertigo, a sense of irritable weakness, mental and physical, follows; vague mysterious messages in a strange language, never heard before, are received, but not understood. This patient has always been well and has had no training along the lines of familiarity with symptoms. These messages, at first ignored, sometimes hushed with a cocktail or a highball, or many of both, become more and more continuous and imperative. The habit of almost mechanical activity of mind projects itself into the hours for sleep, insomnia develops, at first as dreamful anxious sleep, then with fitful, broken sleep, and later with an allowance cut by more than half from the normal. He wakes tired, irritable. The pneumogastric is one of the first and often the most emphatic of the aggrieved protestants. Palpitations, overaction, an irregularity partly toxic, lay the foundation for what later has become an obsession of fear of sudden death—*præcordlangst*—heart anguish. He fears to be alone, to walk alone, to sleep alone. To this other fears have been added. A perfectly legitimate dizziness has laid the foundation for an almost hallucinatory persistence of this impression. Rapid motion, as in the cars or a carriage, high places, sudden changes in the visual perspective, originate as many phobias. Every nerve gets on edge and this hyperesthesia of auditory, or visual, or olfactory, or gustatory, or pneumogastric nerve, varying, as it necessarily does, in degree, gives explanation for the protean system picture. It is the mystery of it all which leads to introspection in attempts at explanation, and finally to an exquisite exaltation of subject consciousness, a veritable delirium of anguish.

Neurasthenia is essentially a recoverable affection. In a majority the recovery is complete and final. In a few, usually neglected or mismanaged cases, the recovery is imperfect, relapses are common and the neurasthenic habit becomes almost a part of the individual. Even in these cases a steadily progressive tendency to recovery and to a normal poise as the final fixed habit may be established by persistent effort based upon an intelligent understanding of the general principles of treatment plus an appropriate application of such principles to the personal equation of the particular patient. Neurasthenia carries with it no penalty to succeeding generations. This statement is contrary to *à priori* reasoning, and also contrary to routine teaching and unthinking or ignorant belief. It is a statement based, however, upon careful observations in an extended experience, and I believe it to be absolutely true. The victim pays the whole penalty; the disease is free from the law of entail. The high average standard of good health and nervous poise in the children of neurasthenic fathers has been a frequent personal observation.

I do not believe that any individual case of neu-

raasthenia ever originated in a single cause. The very essence of the affection makes such an hypothesis a paradox. Equally true is it that no single agency is sufficient to explain the prolonged maintenance of this condition. Any one of many cases may appear to dominate in a given case and for a given time, but the carefully studied etiology will prove a complex one in every instance. The list of stereotyped and empirically accepted causes is a long one and undergoes a progressive expansion from year to year. Overwork, worry, prolonged mental tension and anxiety, malnutrition from deprivation of food, sleep and rest, toxemia of autogenous and heterogenous sources, shock, trauma, reflex irritation, and as many more are on the list. Most of these are contributory factors only, and some are effects which are essentially secondary, being part of a vicious cycle, vicious in fact and even more so in interpretation. The insufficiency alone of any of these factors is tacitly admitted in the usual statement that an hereditary predisposition is fundamentally necessary, a proposition not sustained in my own experience, though carefully investigated always. Neurasthenia is, I believe, essentially an acquired state and heredity, except of temperament, and a high grade cortex is an almost negligible equation. My chief criticism of the ordinary etiology as outlined is the narrow viewpoint with resulting technical limitation in treatment. What is the cause of these causes? *The factor in neurasthenia, in the American disease—the factor common to all cases—is, broadly, that of atmosphere—the atmosphere peculiar to this country, the atmosphere of limitless possibilities, not in one field, but in all; in commerce, in art, in literature, in every field of intellectual accomplishment. It is this ether of limitless possibilities which stimulates the individual to a degree of effort, of tension, of strain, of superstruous endeavor, impossible and unknown, except by the infectiousness of example, elsewhere. There is no limit to the game, and anybody may sit in. America is the only country in which you can go in with one white chip and have a chance to quit the biggest winner. It is this atmosphere which is the incentive to overwork. It is the anxiety, the tension, the strain of the game, which brings worry, loss of sleep and all the rest; and even here the penalty comes indirectly. The intoxication of endeavor, the delirium of effort, is at the expense of all conservatism. The laws of nature—inexorable as fate—fate itself in fact is violated not daily, but every hour. The hygiene of life is set aside. All kinds and degrees of insult are offered to brain, stomach, heart and every other organ. Day after day the steam is kept turned on and at full pressure to the one floor, and, worse still, often to the one room. Is it any wonder that all the rest of the house grows cold, or that, the power being insufficient, the machinery of the lower floors works poorly and makes poor goods? Every function suffers sooner or later. One*

after another, and sometimes several together, they protest, then openly rebel and finally go on strike. Indigestion, toxin and ptomain formation, torpor of sewerage function and resultant defective elimination add the element of chemical irritation, or autotoxemia, or lithemia, to the situation. The tired brain cell gives way under this added handicap and goes out on sympathetic strike.

The accident of dominating symptoms in a given case is but rarely of any value in determining the etiology. Gastric and lithemic and other types may be recognized and distinguished symptomatically with some minor advantage, but no more serious error of interpretation exists than to conceive of them as primary etiological types with a correlated therapeutics. Anti-lithemic drugging will not cure a lithemic neurasthenia, nor will lavage make well your so-called gastric cases.

I have again and again noted a urine with specific gravity above 1.030 with 14, 16, 18 and even 20 grains of urea per ounce, with lime oxalate and urates in abundance, all these conditions giving way to the normal under direct treatment, the neurasthenia remaining essentially unchanged. I never knew a sexual neurasthenic, so called, to be cured by any plan of direct genito-urinary treatment, and this statement applies with equal truth and force to all efforts (and I have seen many) to cure the reflex cases by removal of a supposed cause in any peripheral irritant.

I know of no condition in medicine which demands more exactly of the physician all the diagnostic resources of the profession, and yet mistakes in diagnosis should be rare. The symptomatic semblance of neurasthenia—the pseudo forms—which may sometimes present much of the picture, but will always show a radical omission or addition somewhere, should always be in mind and should be excluded carefully seriatim. More than one patient referred to me as a neurasthenic has been found to be the real victim of tuberculosis, of malaria, of Bright's disease, of gastric ulcer or some other similar affection. Anomalous forms of Basedow's disease in women and various toxic states among men have represented especially common mistakes in diagnosis. Paretic dementia in its incipient stages and some forms of melancholia, particularly the affective types, demand special mention. A guarantee of escape from the opprobrium of error as to the pseudo types is possible only through an exhaustive recourse to all measures and methods of accurate information. Elaborate urinalysis, blood examinations and often examinations of the sputum is a routine procedure with me. In any case in which the dominant symptoms are referable to a particular function or organ persistently, I am proportionately suspicious of a local disease at least complicating the general state. It should not be forgotten that a neurasthenic may have a coexistent Bright's. In Basedow's disease, which

as we know, may utterly lack the spectacular symptoms, the absence of goiter and of exophthalmos may easily lead us to interpret the nervous irritability, the quick exhaustion, the fears, the digestive and other functional disturbances, the loss of sleep and the widespread vasomotor symptoms as due to a neurasthenia, but the habitual quick pulse, the shallow respiratory action, the diarrhea and the *tout ensemble* of constancy in the picture will always give rise to doubts which will be converted into negative certainty when the etiology is considered. From parietic dementia we can distinguish neurasthenia by the presence in the former and the absence in the latter of organic signs. No matter what the degree of incipency, if the disease has advanced to the point of inducing symptoms, we shall find in paresis somewhere some of the physical signs. Special care should be observed in the melancholic (by the way, the majority type) forms of paresis. In melancholia we have, no matter what the subtype, a constant syndrome; a characteristic facies, a postcervical ache, a shortened sleep, an irrational melancholy and a tendency to suicide. In neurasthenia this facies is absent and the tendency to suicide is rare. Melancholiacs get to sleep as a rule with but little difficulty, but wake too soon, at 2, or 3, or 4, and sleep no more. In neurasthenia they sleep lightly, dream much and wake often. The postcervical ache may belong to both, but in neurasthenia it is often a cincture or helmet headache, quickly dissipated by mental diversion. The neurasthenic can laugh; the melancholiac cannot. For a melancholiac to laugh is to refute the diagnosis. From myasthenia gravis it is to be distinguished chiefly by the absence of dominant bulbar symptoms.

What is the pathology of neurasthenia? The answer is almost anyone's guess, and yet to know the lines of experimental research and investigation already established is a long step in the direction of what will finally prove the correct guess. The work of Hodge, familiar to you all, was a far call in the right direction, and while it has given us no final solution, it probably paved the way to the yet to be demonstrated pathological explanation of these cases. The effects of fatigue, of worry, of irritation, upon the brain cell structure was proven to be actual and demonstrably so, by his work. Barrows has added observations which demonstrate with equal positiveness the structural and sometimes actually organic changes and results which follow to the cell from malnutrition. All neurasthenics, it should be remembered, are examples of malnutrition from faulty assimilation and metabolism, usually secondary. The work along chemical lines with a final explanation in states of auto-intoxication promises much, but that which appeals most strongly, even though as yet it offers least in a tangible, material way, is a combination of the others with an imaginative elaboration of the ion theory. The analogy of the highest governing nervous system with a telephone service

in a large city has occurred to many, appeals to most of us and is familiar to you all. We have all been able to grasp mentally some conception of the power plant, the conducting wires, the receiving and transmitting station of the subscriber and a central, but the plan of a central switch-board is where we stop. The hello girl of the central station will not do. She is too unreliable; she goes to sleep on post; she talks distracting gossip; she has no sense of duty at times. Her sole stimulus to duty well done is often the approval of the inspector only and the \$10 per week. Neurasthenics don't gossip, they don't go to sleep—more's the pity—and yet the switch gets out of gear and you cannot get a connection, or if you do there is a buzz and you can't understand which stands for the weakness; to which we might add in carrying out the analogy, the usual profanity, to represent the irritability. Mendelssohn, Frankhauser and others, in attempts to give a tangible, graspable explanation of electrical action upon nervous function, have advanced and elaborated what might be called the theory of wandering ions. You will recall that, when first announced, the neuron theory, in addition to facts proven, claimed, but did *not* prove a distinct individuality for each neuron, with no anastomosis anatomically with other neurons. This undemonstrated claim was unaccepted for the reason that it left less explained than before the observed and familiar facts of concert of action and synergistic relationship of nervous function which seemed to demand some anatomical connection. Imagine bodies endowed with autogenous mobile life, which stretch an arm from 1 to 5, or A to G, wandering about with a restless usefulness, connecting two separate souls who want to get in touch in the same way but with infinitely more reliability, as the central hello girl connects you up with the number you send in from the transmitting phone. Imagine these little bodies, goaded day after day to extraordinary effort, allowed no rest, no sleep, whipped by alcohol, or tobacco, or coffee, suffering from deprivation and irritation in every way, rations served foul, working for a thoughtless, selfish, utterly inconsiderate master. Do you wonder that they get discouraged, tired, exhausted and confused, taking messages wrong, turning in a fire alarm here, calling in the police there, doing many things which they should not do and leaving undone those things which they should do? Very pretty, you will say, but fanciful. I admit it, but I deny any more of fact in any other theory.

The first step—the essential foundation of any plan of successful treatment in neurasthenia—is the establishment of a proper relation between physician and patient. The status of the physician should be firmly established before the question of treatment is considered at all. He will have laid the foundation of any plan of successful treatment well in a direct ratio with the thoroughness, the exhaustiveness of his diagnostic examination of the patient. Nothing should be taken

for granted—no second-hand information should be accepted. At the risk of being tedious, examine for yourself. Five minutes or less is often more than sufficient time for a final diagnosis in paresis or tabes—two hours is often time well spent in the first examination of a neurasthenic, and this is true even in the instances in which as many minutes only have been necessary to convince you of the nature of the case. Remember there are two parties to the transaction. Your own enlightenment is not the only requisite. The neurasthenic always takes himself and, at least, some of his symptoms seriously. To tell him abruptly that this or that means nothing is not convincing to him, however true to you. No obvious foundation has been laid for so positive a statement in so short and superficial an examination. To you many of the symptoms are distorted by exaggeration; to him they are real. Do not forget the axiomatic fact that neurasthenia does not develop in a fool, and as corollary to this fact make your appeal to the intelligence of your patient. Explain things; give the patient something tangible to grasp, some explanation which appeals to reason. He will leave the ether of imagination and come down to the terra firma of fact gladly. The effect at first may be upon the subconscious ego only, but the leaven of action will later rise into controlling consciousness. The physician, by the way, should never think, or believe, or guess; he should know. Therefore, he should lay at least a plausible foundation for such knowledge in a patient examination at the first interview. It is just as important that a reverse attitude should be the rule thereafter. Discuss with your patient in subsequent interviews every topic conceivable except his ills. At stated intervals go over the case objectively, taking an account of stock. Where favorable progress is noted, not only mention it—prove it; if still *in statu quo*, explain the delay in results. Silence is rarely golden in such situations. Equally important with this factor of proper relationship between doctor and subject is the control of the patient's environment. Just which is proper varies with different cases, but once settled, it should rarely vary with the case. Compromises and concessions are always dangerous. The patient's hand should never touch the tiller, once you have taken charge of the ship. First, place him so as to minimize the influence of all adverse factors, domestic, financial or otherwise. Break up, as far as possible, all subtle or obvious factors which contribute to a morbid introspection by conscious or subconscious association. Encourage objective consciousness by a change in the physical and mental atmosphere. Sometimes this must be done radically, and the patient cut out from the family or from his business. Never leave him alone, and never leave him idle. Put with him a tactful, resourceful, sensible attendant—train your own nurse, by the way—train him over again, if a hospital graduate. Don't call him a nurse in any event—neurasthenics

resent trained nurses. Give all your instructions to this nurse-companion—never to the patient, who should have nothing whatever to do with his case. Arrange all details of diet, of exercise, medicines, baths, diversion, etc., with the nurse. Give your patient a chance to escape from a knowledge every hour of the day that he is a patient. Keep him busy, fill in every minute of the day. A salt rub in the morning, the patient standing in eighteen or twenty inches of hot water, three minutes of practice in deep breathing exercises, after which comes breakfast. All meals should gradually be made as full and as nutritious as possible. I observe idiosyncrasies, but no other law of special diet. After each meal from twenty to thirty minutes of recumbent rest is insisted upon—a habit observed by nearly every carnivorous animal, except man. Next comes the daily visit to my office, with treatment by the galvanic current, one electrode back of the neck, the other over the forehead, both as large as possible, in order to get the utmost diffusion at the point of contact and thus a maximum of electricity with a minimum of discomfort from local action. A steady battery, a rheostat, a meter, and proper electrodes are absolutely essential. Part of the benefit is undoubtedly due to suggestion. This is a small part, however, by comparison with what I am firmly convinced by years of careful observation to be an intrinsically dynamic effect of sometimes striking benefit from electricity thus administered in these cases. I never exceed five milliamperes in amount, or half an hour for the seance. Usually I begin with one milliampere and a five-minute seance. On leaving my office, my patient goes direct, riding or walking, according to circumstances, to a gymnasium, the director of which, Dr. Watson L. Savage, is a medical graduate, whose life-work has been given with enthusiasm to the cooperation, elaboration and perfection of a plan, which we both believe will, when perfected, prove a specific, curative treatment for these cases, a proper environment and control being the only other essentials. By this plan of psychophysical, educational control, we secure, by the indirect method, what is always difficult, and often impossible, by any direct plan—a lowering of tension, a mental relaxation, a return to rational inhibition, to order from chaos. These patients are taught the lesson of physical, muscular relaxation—how to lie down, how to go through the mattress to the bottom, how to turn loose physically. That the muscular system is energized and overkeyed into states of hypertension through sympathy with states of mento-nervous exaltation is familiar to us all in the tense mouth, the corrugated brow, the clenched hand, the restless walk. We simply start at the other end, and re-educate the higher through the lower. The quickest, the surest, the most rational way to key-down a man mentally is first to key him down motorially. I have waited for ten years of results to accumulate before announcing publically, except in the

lecture room, the value of this procedure. I give you no experimental theory. My unqualified endorsement is based not only upon a rational conception but many confirmations in experience. I count this part of the plan of treatment in neurasthenia one of the most positively helpful and essential of all the major details. The afternoon, following lunch and another half-hour of rest, is spent out of doors—a drive, a horse-back ride, golf, tennis, a walk, a visit to some museum or place of public interest; a shifting from one to another of these various diversions largely based upon the personal equation of temperament and aptitude in your patient, fills up the afternoons. In suitable cases part of the evening must be filled, and occasionally the theatre or a concert can be utilized, but never at the expense of sleep, if insomnia be present. A half-hour of massage at bedtime closes the day's work.

This one symptom, insomnia, must be controlled always. Make your patient sleep—count a dreamful night insomnia. Veronal, trional, sulfonal, in 5, 10 and 15-grain doses, are effective and satisfactory. I often shift them. All should be given in some hot menstrium. No nervous patient should ever know his drugs—send the prescription yourself, and always mark it, "No copy. Do not repeat." Fifteen years ago a few neurasthenics under my care came back to health and nervous poise in spite of the drugs which I employed in treating them. For five years past, using less than half the drugs, my percentage of recoveries has increased fourfold. Drugs play a varying part—sometimes no rôle at all, again a vital one. Some patients demand them, others are indifferent, and still others need them neither mentally nor physically. Sleep must be secured and maintained, elimination and prompt sewage function regulated and complicating accidents combated. For temporary use, until the regime outlined becomes effective in lessening it, the mental state of habit unrest and hyperpsychical esthesia should be controlled, and the drug which most effectively accomplishes this purpose is opium in the form of the denarcotized, aqueous extract in doses from one-tenth to quarter-grain three or four times daily. Free water drinking between meals is a desirable habit to encourage and a positive water, always symptomatically remedial in cases in which lithemia is an aggravating factor, is the Royal Fachingen. I do not believe in the sanatorium treatment of these cases as I know sanatoria. If the ideal sanatorium existed, the sanatorium plan would be ideal. I add nothing to your personal knowledge, when I tell you that such an ideal does not exist. I can conceive of no more fitting nor important statement in conclusion than one of condemnatory criticism of the misapplication of the Weir-Mitchell plan of rest and isolation in these cases. It is to be condemned first, as involving the conception of a routine system or plan of treatment; second, as encouraging introspection; and third, as violating in principle all intelligent interpretation of the

whole subject. For women and feminine males it will do no harm; for men and masculine women it is an insult to intelligence.

105 West Seventy-third Street.

MEDICAL PROGRESS.

MEDICINE.

Edema of the Feet and Legs.—During the last three years particular attention has been paid to the investigation of the relation between dropsy and the retention of chlorides in the tissues. It has been shown in a definite manner that the question of chloride ingestion and retention has a very important influence on the production of anasarca. It has also been demonstrated that in health an excessive ingestion of chlorides may lead to an increase in the weight of the body, as a result of the tissues retaining more fluid than under normal conditions. J. H. BRYANT (*The Practitioner*, August, 1905) records a case in which the excessive ingestion of chlorides was followed by not only retention of fluid in the tissues and a consequent increase in weight, but also by marked edema of the extremities. The patient was accustomed to taking 300 to 600 grains of salt a day. Examination of his urine showed the presence of 1.86 per cent. of chlorides, i.e., nearly three times the normal amount. After reducing the amount of salt ingested the edema disappeared and the urine contained only .98 per cent. of chlorides. Widal and Javal found that, in cases of interstitial nephritis, doses of sodium chloride up to 150 grains did not give rise to edema, but, in cases of parenchymatous nephritis, the result was different, edema was produced. They found that the chlorides were not excreted entirely, and that, as a result of their retention, the fluid in the tissues was retained. They further showed that by increasing the amount of chlorides in the diet the edema increased; but, on the other hand, if the ingestion of chlorides was diminished the tissues were drawn upon for their reserve chlorides, and as they were used up the edema disappeared. They also demonstrated that there was a definite relation between the hydration of the body and chloride retention, by changing three men suddenly from a diet rich in chlorides to one almost devoid of chlorides, the result being a reduction of the body weight of four or five pounds. The belief expressed by Widal and Javal, that the elimination of chlorides by the kidneys is a specialized function of these organs, offers the best explanation of the occurrence of edema of the legs in this case. It may be presumed that for a considerable time the kidneys had been able to deal with the excessive amount of chlorides presented to them for elimination, but it is equally reasonable to suppose that sooner or later there would be a limit to this overwork, followed by a breakdown if persisted in, and that it was a failure of this specialized function to continue at high pressure which led to an abnormal retention of chlorides in the tissues, and thus produced the dropsy.

Causation of Arteriosclerosis.—J. M. COWAN (*The Practitioner*, August, 1905) reviews the various theories that have been advanced to account for the production of arteriosclerosis, and arrives at the following conclusions: Arterial damage may result from many and various causes. Continued high blood pressure invariably, in time, affects the vessels, and this is one of the most important causes of widespread disease. High blood pressure may be secondary to renal lesions, or may originate without any renal flaw. It is in the latter case the result of alimentary wrong-doing. Excess,

relative or positive, of the foodstuffs or of alcohol, intestinal fermentation or putrefaction, hepatic, pancreatic or gastro-intestinal insufficiency, may thus all be the initial fault. The arteries may be damaged in various intoxications; the metallic poisons (lead, mercury, etc.) comprise one group, and the bacterial toxins (rheumatism, enteric fever, etc.) another. Bacteria themselves may be found in early lesions. Syphilis is a frequent cause of local lesions. Severe continued physical exertion, however it may act, is probably also a causal factor.

Physical Degeneration and Syphilis.—Referring to the question of physical degeneration F. J. LAMBKIN calls attention (*Brit. Med. Jour.*, Aug. 19, 1905) to syphilis, the prime factor in causing it. That this is true is generally acknowledged, and the question arises as to what advance has been made in the treatment. Undoubtedly the treatment of syphilis has materially advanced, but it is questionable whether or not civilians have taken advantage of it. The immediate signs and symptoms have been greatly ameliorated during the past decade, but the returns of lunacy present a terrible record. In the army both the early and late signs and symptoms have been materially diminished. This has been accomplished there chiefly through the system employed. This consists of hospital treatment until the active signs have disappeared. Then the patient is injected intramuscularly once a fortnight with metallic mercury in form of cream, Hg , containing gr. i, for three months. Following this there is two months intermission, and again three months active treatment. Usually at the end of this period the disease has been stamped out. The insoluble salts of mercury are preferred, since the injections may be given at longer intervals. The injection method of treatment is recommended over the method of internal medication because then it is known that the medication is continuous, which in nine cases out of ten is not the case when people are depended upon to medicate themselves. Therefore, for those interested in degeneracy the problem becomes one of consistent and continuous antisymphilitic treatment among the masses.

Diagnostic Value of Digestive Leucocytosis.—In the normal individual there is, according to P. VAN-STENBERGHE and M. BRETON (*Arch. de Med. Expér.*, July, 1905), a post-digestive leucocytosis which attains its maximum two hours after the meal, and which markedly exceeds the daily oscillations of the leucocytosis curve of the fasting individual. The increase is principally in the mononuclears. In the fasting individual the periodic daily rise is in the polynuclears. Post-digestive leucocytosis is absent in certain morbid conditions, particularly in gastric and hepatic cancer. This absence has nothing to do with the cachexia or anemia which always accompany these affections. It appears to be dependent upon an irreparable functional embarrassment of the digestive organs. This absence is not an absolute diagnostic criterion, but it has an importance equal to if not greater than the various chemical methods of diagnosis.

New Test for Diabetic Acid.—The following new test for diacetic acid in the urine is recommended by L. LINDEMANN (*Münch. med. Woch.*, July 18, 1905): 10 c.c. of urine are acidified with 5 drops of 30 per cent. acetic acid. Five drops of Lugol's solution are then added and the urine shaken out with chloroform. If diacetic acid is present the chloroform will remain colorless, while under normal conditions the chloroform will dissolve out free iodine. The reaction should be distinctly acid, so that in case of alkaline urines more acetic acid will be necessary. By determining the amount of iodine

necessary to tinge the chloroform, the percentage of diacetic acid present may be determined roughly. The only other substances which give the reaction are the thio-sulphates and the sulphites, but these never occur in the urine in sufficiently large amounts.

Levulosuria.—Levulosuria is a very rare condition and in the few cases recorded some dextrose was usually also excreted. In a case of O. NEUBAUER (*Münch. med. Woch.*, Aug. 8, 1905) the urine fermented with yeast, reduced Fehling's and Nylander's solutions, turned the polarized ray of light to the left, formed an osazone with phenylhydrazine and gave the specific reactions for levulose with methylphenylhydrazine and with Seliwanoff's reagent. The sugar could be isolated from the urine, and was found to be free from glucose. The symptoms were those of true diabetes, with marked nervousness. On withholding carbohydrates the urine became free from sugar. The administration of starch, glucose, galactose and lactose did not provoke glycosuria; but after levulose and cane-sugar, the levulosuria reappeared. Inulin also proved to be harmless, so that the condition was more of an alimentary levulosuria than a true diabetes. On withholding all substances containing levulose or cane-sugar, the patient improved rapidly.

A New Hemoglobinometer.—Absolutely accurate instruments for measuring the amount of coloring matter present in the blood are too complicated and expensive for the practising physician, and the simpler instruments are usually so inaccurate that no two give the same readings. A very ingenious hemoglobinometer has been devised by P. GRUETZNER (*Münch. med. Woch.*, Aug. 8, 1905). The principle is the same as in the Fleischl, except that the wedge is formed by the diluted blood, which is compared with a standard color. The wedge is moved up or down until the two colors correspond accurately. Two extra slits above and below will greatly facilitate the matching of colors, and artificial light is not required.

Epidemic Simulating Influenza.—R. A. DUNN and M. H. GORDON report an epidemic (*Brit. Med. Jour.*, Aug. 26, 1905) which clinically and bacteriologically simulated influenza. The chief symptoms varied widely. Some cases appeared to be scarlet fever, some influenza, and others cerebrospinal meningitis. Bacteriological examination of the tonsillar and nasal mucus frequently revealed a non-Gram-staining diplococcus. The onset was nearly always sudden; exceptionally there was a catarrhal prodrome. Sometimes there were rigors or chilliness. The temperature was usually from 99° to 101°. Sore throat, often severe, enlarged cervical glands and stiff neck were frequent symptoms. Headache and body pains were present in most cases, and drowsiness, photophobia, nasal discharge, sneezing, lacrimation, constipation, nausea or actual vomiting were noted. Desquamation was met with occasionally, even in the absence of rash. The usual sequelæ were weakness and debility. Children were more severely attacked than adults. The cases simulating scarlet fever had the usual onset. The rash appeared within twenty-four hours. It did not invariably begin on the chest, but often along the posterior border of the sterno-mastoid, spreading rapidly over the rest of the body. It consisted of an erythematous bluish and punctate spots. Usually it lasted not longer than from one to three days, and was followed by desquamation, which, as a rule, began early. The typical "strawberry" tongue was occasionally observed, and hematuria and albuminuria were present in several patients. A very discrete papular rash was sometimes noticed a week or so after the primary rash. Sudaminal rashes were also seen, and in four patients purpura was noted. Recovery

was tedious. In the cerebrospinal cases the onset varied. In some, cerebrospinal symptoms were the first noticed, whereas in others these followed on those of an influenzal or typhoid condition. Severe headache was a constant symptom and was nearly always associated with pain in the back of the neck and stiffness. Pains in the lumbar region was frequently present. Vomiting was an early and constant symptom. The temperature was very erratic, sometimes low, sometimes as high as 104° F. Discharge from the ear occurred in several patients, and a copious mucopurulent nasal discharge was nearly always present. In only a few cases has marked opisthotonos been noticed. The nervous symptoms and paralyses showed no settled type. Dilatation of one or both pupils, incontinence of urine and feces, and trophic changes in the muscles were all met with. Ten patients had Kernig's sign. Clinically the differential diagnosis of this condition from influenza, scarlet fever and cerebrospinal fever is not easy. The number of rash cases, occasionally followed by nephritis, the association of cerebrospinal symptoms, the frequency of stiff neck, and the severity of the disease among children and its mildness among adults, are strong points against influenza. The absence of Pfeiffer's bacillus is confirmative. Again the absence of much fever and the irritability of the rash appear to be points against scarlet fever, but what was far more convincing was the association of the different types of the disease in the same invaded household. Evidence against cerebrospinal fever was the mildness of the epidemic, the comparatively small number of cases with typical cerebrospinal symptoms, the infrequency of the two concomitant rashes, purpura and herpes, and the fact that no organism having all the characteristics of the meningococcus could be obtained. The organism observed in twenty-two cases of twenty-four cases was a Gram-negative coccus, growing freely upon ordinary agar at 37° C., and gelatin at 20° C., and producing an alkaline reaction when cultivated in leucolimus fluid, containing either glucose, gelactose, maltose, or saccharose. It would seem that this organism is closely allied to or identical with *Micrococcus catarrhalis*.

Asthma.—SAMUEL KOHN, presenting a paper upon this subject (*Med. Rec.*, Aug. 26, 1905), says the theories which to-day are most generally accepted as the direct anatomical cause of the asthmatic paroxysms are the bronchospastic, combined with the vasomotor parietic. Experience has proven that the disease occurs principally in persons of neurotic temperament, the predisposition being frequently hereditary. The essential etiological factor is probably some organic lesion of the nerve centers of the medulla, but this has not yet been demonstrated. The causes producing the first outbreak will be found in irritations of peripheral nerve endings of the vagus and other nerves connected with it. Since, no matter where the irritations are found, be they in nose, throat, bronchi, skin, viscera, circulatory media or brain, the paroxysms induced are so uniform and characteristic that the consensus of opinion entitles asthma to be considered a disease and not a symptom. The anatomical change responsible for the respiratory difficulty is dilatation of the alveoli of the lung. During an attack this grows more marked, the more strenuous the patient's inspiratory efforts become. The alveolar walls in time lose their elasticity and emphysema may follow, which, when this is the case, often moderates or entirely abolishes the attacks. The treatment is divided roughly into climatic, hygienic, symptomatic, gymnastic, psychic, hydrotherapeutic, medicinal, operative and institutional.

Abuse of Bromides in Epilepsy.—For a number of years the bromides have been losing favor in the treatment of epilepsy. After observations upon nearly two thousand cases W. P. SPRATLING (*Med. Rec.*, Sept. 2, 1905) concludes that the bromides, as ordinarily employed, do more harm than good. He claims that he has not yet seen an epileptic cured by bromides alone. A short time ago the amount of the drug that was being used at the Craig Colony was reduced nearly one-half. The result was a considerable temporary increase in the number of attacks, but these shortly fell to their normal number, most of the patients showing mental and physical improvement while free from bromism. The chief difficulty in administering bromides lies in the inability to prescribe the precise individual dose the patient's condition demands. In no case should it be lost sight of that there is a point of physiological toleration and of therapeutic usefulness which should not be exceeded. Only exceptionally does it ever become necessary to push the drug to the point of inducing bromic acne, whereas to cause bromic dementia is an inexcusable blunder. Loss of memory is frequently seen from blunting of the intellectual faculties. The physiological effects of these salts are generally deleterious if continued, resulting in depression, anemia, emaciation, and feebleness, facts which sufficiently show their little use in epilepsy. Abandonment of bromides, and the use of other harmless depressants instead, and a general recognition of the principle of first treating the individual instead of the symptom would soon more clearly show their very limited value.

Rats in Relation to Plague.—A causal relation between rats and plague has been recognized since the earliest time. In a study of the habits of rats BRUCE SKINNER makes some interesting observations (*Brit. Med. Jour.*, Aug. 26, 1905). It is inferred that the rat, the indigenous species of the plague areas, causes or spreads this disease. There are certain seasons when rats betake themselves to houses. In the cold countries this occurs during the winter months, whereas in the warmer regions shelter is sought during the rainy season. Reference to the literature upon plague shows that the height of the epidemic is usually attained at the time when rats should be in the fields, and the minimum is reached when they take shelter from the rain. He suggests as borne out by the examination of the habits of rats, so far as they are known, that though he suffers from plague, he is not the source of the disease. Were he the source, the epidemic should be most severe when the rat is in most intimate contact with the human population. Again there is nothing to show that the destruction of rats reduces plague incidence. But inasmuch as rats suffer from plague, which some have suggested is conveyed from them to man by the flea peculiar to *M. rattus*, many may consider it politic to exclude rats from dwellings. Rats avoid lime, for it burns their feet. Therefore the free use of unslaked lime about the premises, and particularly along their runways to water, will effectually keep them away. The intelligence, assisted by the acute sense of smell possessed by rats, is so keen that it is very likely that they would not return even in the rains to plague-infected houses if the cause of that disease were inherent in the dwellings. The rat, however, does return at that season and remains throughout the rains; so it may be allowed that he cannot be responsible for the recrudescence which occurs after the rains, and which must be due to some other cause apart from rats coming into play after a period of quiescence.

Syphilis of the Third Generation.—In presenting a digest of this important subject, C. F. MARSHALL con-

cludes (*Lancet*, Aug. 26, 1905) that the degenerative or dystrophic effects of syphilis are transmissible to the third generation or possibly further, only to die out with eventual sterility. Although difficult to prove, the transmission of virulent hereditary syphilis to the next generation is scientifically possible, the question depending chiefly on the factors of time and treatment. Hereditary syphilis may not become manifest until the procreative age, hence a hereditary syphilitic genitor in a virulent state might transmit the disease in a virulent form to the offspring. The reason why such cases are rare is the fact that a small proportion of cases marry while suffering from hereditary syphilis in virulent form. At the time of marriage the disease is usually attenuated by time and also by treatment. Reinfection of a hereditarily syphilitic genitor increases the virulence of the disease and its fatal effects on the offspring. The two chief obstacles to actual proof of transmission to the third generation are the possible reinfection of the second generation and the possible intervention of another syphilitic genitor.

Contracted Muscles of Infantile Paralysis.—The usual theory accepted as accounting for the production of talipes is that, owing to the unbalanced state of the muscles, the stronger have been in a condition of overaction, have overpowered their weaker opponents, and by gradually approximating their own points of attachment have become permanently shortened. F. R. FISHER contends (*Lancet*, Aug. 26, 1905) that this is certainly inaccurate in one respect, the contraction of the muscles precedes the drawing together of their points of attachment, the latter being not the cause but the result of contraction with which the shortening of the muscle is coincident. It is also extremely doubtful if a muscle will acquire from overaction a condition of permanent contraction. The term "contracted muscle" by no means conveys a correct idea of the muscular lesion. Contraction is a normal attribute of muscular fiber; here, a distinct abnormality obtains, consisting in the deprivation of the tissues' ability to relax; "intractile muscle" better defines the state of inextensibility, which, as the main feature, should be especially considered. In theorizing on the development of paralytic talipes writers have hitherto overlooked the point that muscular intractility is as distinctly a loss of natural function as is muscular paralysis; in the one ability to relax is reduced, and in the other power of contraction is lowered. It is known that the loss of contractile power is due to the degree of destruction of the motor cells in the anterior cornua; it is possible that from the loss of a controlling influence naturally exercised by the same central structures arises the development of intractility. In considering the obscure changes consequent upon poliomyelitis the most difficult task is to throw light upon those cases in which the muscles, apparently deprived of contractile tissues, are able to generate very evident distortions. Voluntary movement can hardly account for the phenomena, nor does it seem possible that reflex action can be existent. The only solution which suggests itself is that some feeble stimulus may be issued from the cord, erratic messages from a directing center which has been thrown into a state of hopeless confusion. Be this as it may, the development of paralytic talipes probably depends entirely upon neuropathic influence.

Hiccough, Its Physiology, Pathology and Treatment.—A comprehensive and exhaustive essay on this subject, as gathered from a study of an enormous bibliography, is furnished by J. BERTIER (*Gaz. des Hôpitaux*, July 8, 1905). Hiccough is defined as a sudden contraction of the diaphragm, causing a sudden

motion of the abdominal and thoracic walls, and accompanied by a coarse and inarticulate sound caused by the closing and sonorous vibration of the lips of the glottis. The diaphragmatic spasm is but one of the factors of the syndrome which comprises other associated phenomena, glottic and gastric. There is a double nervous control of the act of hiccoughing: through the phrenic the diaphragm is made to contract; by means of the vago-spinal nerves there are brought about the closure of the glottis, the contraction of the stomach and the relaxation of the pyloric sphincter. A center co-ordinating these movements is supposed to exist in the neighborhood of the vital center, and the center of vomiting. Numerous centripetal paths bring the hiccough center into relation with numerous peripheral sources of irritation. Clinically these irritations are found in the domain of the pneumogastric (foreign bodies in the lung, pleurisy, affections of the liver, stomach, intestines, peritoneum, esophagus, pharynx), of other visceral nerves (pregnancy, diseases of the prostate, kidneys, bladder, uterus), or the nerves of general sensibility (exposure to cold). Besides these reflex causes of hiccough there are direct central forms of stimulation of the center controlling this act. Thus it may be due to imagination (hysteria, imitation, epidemicity), to toxic products (uremia, tobacco, alcohol), and to anoxemia (agony, severe hemorrhage). The irritation may affect the centrifugal limb of the reflex arc (luxations of the cervical vertebrae, tumor of the mediastinum, aneurism of the aorta, pericarditis, diaphragmatic pleurisy, wounds of the diaphragm, splenomegaly and perisplenitis). Hiccough is sometimes preceded by a sort of aura, a sense of epigastric tension. Sometimes diaphragmatic spasm is so violent as to cause a synchronous raising of the shoulders, limbs and trunk, rapidly producing fatigue if the attack is prolonged. In other cases the glottic element is the principal one, producing an intense sound like the bark of a dog (a case being reported in which the sound was heard at a distance of three-quarters of a mile). Ordinarily the spasms have a rate of 6 to 15 per minute, but in severe cases there are as many as 60 to 80. They have already been observed in one case synchronous with the cardiac pulsations. Generally hiccough stops during the night; sometimes it persists. In severe cases hiccough causes a considerable amount of functional disturbance: anxious respiration, cyanosis, difficulty of deglutition and serious impairment of nutrition. In the course of diaphragmatic pleurisy it causes intense pain and insomnia. Speech is sometimes impossible. At times hiccough relieves the distress of dyspepsia by causing eructation of gas. Ordinary attacks of dyspeptic hiccough last a few minutes; those due to inflammation of the pleura or peritoneum may persist for hours or days. Certain hysterical cases have lasted for twenty to thirty years. The following clinical forms are enumerated: A. Reflex. (1) Diseases of the stomach; liquids too hot or too cold, unchewed food, carbonated liquids, indigestion; it may be a troublesome accompaniment of cancer, ulcer and hyperchlorhydria. In nurslings it indicates an overloaded stomach. (2) Affections of the pharynx, aphthae, abscess, esophageal spasm due to benign or malignant stricture. (3) Diseases of the peritoneum; every time the peritoneum is irritated hiccough is apt to arise; it is less constant in the localized varieties. (4) Intestinal disorders, including dysentery, lumbricoides. (5) Diseases of the liver. (6) Diseases of the spleen, most frequently hypertrophy. (7) Genito-urinary disorders, above all; affections of the bladder. (8) Uterine disorders. (9) Pregnancy, in this case due to toxemia, like vomiting.

(10) Abdominal wounds. (11) Diseases of the respiratory organs, particularly diaphragmatic pleurisy and pneumonia. In the former it is the source of agonizing pain. It is seen in subphrenic abscess. In pneumonia it occurs on the fifth or sixth day and is ordinarily very violent. (12) Mediastinal compression. (13) Pericarditis, in which it is a bad symptom. (14) Exposure to cold. (15) Affections of the peripheral nerves, as in sciatica. (16) Spinal disorders, as displacement of cervical vertebrae. B. Hiccough of central origin. (1) Hysteria. Boerhaave reported an epidemic in Haarlem. The hysterical cases may be easily differentiated from those of symptomatic origin. In the former the glottic phenomenon is the most marked, and the sound produced is intense. In these cases the prognosis is good, as regards life, but interference with sleep and nutrition may cause a general debility. (2) Emotion. Seen in neuropathic subjects, transitory, and sometimes occurring in the course of laughing or crying, when it is really a sobbing. (3) Chorea and epilepsy. (4) Intoxications; lead colic, nicotinism, alcoholism. (5) Auto-intoxications, as uremia. (6) Infections. The hiccough of typhoid fever has been most studied. It appears late, most frequently in some epidemics, at first is intermittent and then incessant, sometimes accompanied by biliary vomiting, preventing sleep, interfering with speech and swallowing, and disappearing at the end of a few days. It has been attributed to various causes: abdominal distention, splenic hypertrophy, ulceration of esophagus, and most recently to the action of the typhoid toxins upon the bulbar center. Hiccough is also seen in scarlatina, scurvy, yellow fever, cholera and hydrophobia. (7) Cachexias. (8) Hemorrhages. (9) Death agony. (10) Bulbar diseases. (11) Cerebral affections. In diagnosis hiccough may be easily distinguished from pharyngeal and laryngeal spasms, yawning and aerophagia. In treatment the following have been used: A. Medicinal: Injection of morphine; valerianate of zinc, belladonna and camphor, belladonna plaster over the phrenics, bromides and belladonna, opium and chloroform, inhalations of chloroform, ether injection of pilocarpine, infusions of peppermint, musk, theriac and belladonna, cocaine and belladonna. B. Non-medicinal. (1) Peripheral irritation, causing inhibition of the motor phenomena. For this purpose the following have been used; epigastric acupuncture, tickling of the pharynx, compression of the auditory meati with extension of the head, actual cautery, chloroform compresses on the epigastrium, epigastric ether pulverizations, raising of the hyoid bone, drinking slowly while pinching the nose, sinipisms, vesicatories, catheterization of the esophagus, tetanizing galvanization of the esophagus, pharyngeal irrigations with cold water, compression of the fists, compression of the cubital region, compression of the ball of the thumb with the little finger, a little salt or sugar placed on the tongue, and thrusting the tongue systematically out of the mouth. (2) Increasing the oxygenation of the blood by means of 40 to 50 rapid and deep respirations. (3) Direct action on the phrenics; compression, galvanism, vesicatories. (4) Magnetism, applied to lower part of thorax. (5) Mechanical interference with movements of diaphragms; forcible manual compression of the diaphragm, forced expiration or inspiration, abdominal bandage, and suspension of respiration. (6) Cold baths and wet packs. (7) Suggestion in all its forms; most of the above act in this way. The following are the main points in the treatment. If the case is due to hysteria, remove the provoking cause, give preparations of valerian, employ the mechanical methods, and if all else fails, resort to suggestion or the hypnotic

sleep. (A trip to Lourdes has cured one bad case.) In the symptomatic forms, try to remove the cause. Combat the underlying neuropathic element; diminish the bulbar excitability by means of the various mechanical inhibitory methods; if in spite of these the hiccough persists, use morphine, and if nutrition is interfered with gavage.

PATHOLOGY AND BACTERIOLOGY.

Recurring Phlebitis of Obscure Origin.—U. B. BAIGES (*Bull. Johns Hop. Hosp.*, June, 1905) reports a series of cases of recurring phlebitis which clinically are characterized by a progressive and relapsing course which are obscure alike in their pathology and etiology. Their clinical picture is so consistent and their cause so obscure that the author considers them to be instances of idiopathic recurrent thrombophlebitis. The cases seem, after the most careful consideration, not to be dependent upon a gouty, septic or traumatic origin. The author makes the following etiological suggestions: We are familiar with the predilection of thrombotic processes within the arteries for such portions of the vessel wall as are affected by arteriosclerosis. The acute and inflammatory affections of the endocardium are specially prone to attack valves already damaged by preference over those with unaltered endothelial coverings. We also know that phlebosclerosis is a condition quite analogous anatomically to arteriocalillary fibrosis, that it is frequently associated with the latter condition, may occur very early in life, and has hitherto attracted rather a curious interest, as having no particular significance. May it not be that the cases of venous thrombosis with which we are dealing depend for their immediate and localizing cause on such sclerotic changes in the walls of the veins? If a cachexia may determine the production of a thrombus within an artery, it seems very easy to believe that with the much slower current of the blood within the veins, an extreme or even beginning phlebosclerotic change might determine the deposition of a fibrin coagulum from the blood stream. Sclerotic alterations of the vein walls are often observed to progress by fits and starts, at times with great rapidity, and then to remain in a stationary condition for years. It is suggested that such a rapidly progressive stage of the fibrosis, if associated with a small, even at first a purely partial thrombosis, might produce just such a series of phenomena as are shown by the present group of cases.

Amount of Catalytic Ferment in Blood.—The amount of catalytic ferment present in the blood can be best determined according to A. SOLLES and M. OFFENHEIM (*Virchow's Archiv*, Vol. 180, No. 2), by adding hydrogen peroxide in excess and then retitrating the undecomposed amount of peroxide by means of permanganate or thiosulphate. It was found that normal human blood will decompose a constant amount of peroxide, namely, 23 grams to the liter. Lowering or raising the temperature, and the addition of various poisons, will materially diminish the power of decomposition. In disease there may also be a marked diminution, though constant factors could not be determined. The blood of amphibia can only break up the peroxide very slightly, and in the blood of animals living altogether in the water this property is absent almost entirely.

Relation of Chlorides in Urine to Gastric Function.—The amount of chlorides present in the urine during different parts of the day has been carefully investigated by A. MÜLLER and P. SAXL (*Zeitsch. f. klin. Med.*, Vol. 56, Nos. 5 and 6). They found that the

effect of meals is undeniable, for directly after there is a rise, followed by a fall and then a second rise. These fluctuations are only moderate after breakfast, and during night there is usually a marked diminution. The excretion of nitrogenous matter runs a curve very similar to that of the chlorides. The first rise is due to the absorption of chlorides, the depression to the fact that the salt in the blood is being used up for the hydrochloric acid of the gastric juice, and the final rise is accounted for by the absorption from the intestines. The acidity of the urine varies only slightly, but frequently the urine is slightly less acid after the chief meal of the day. Other interesting details of the chloride excretion are: If a large amount of salt is taken with the meal the initial rise will not appear, probably because the salt interferes with the absorption from the stomach. The depression is more or less marked if the secretion of gastric juice is excessive or diminished. If there is complete absence of acid in the test-meal the depression will often be absent altogether, and a very low curve will be obtained if bicarbonate of soda is taken after meals, since more acid will be secreted to neutralize this. Hydrochloric acid, on the other hand, will flatten the curve.

Experimental Researches on Adrenalin.—Two of the best known properties of adrenalin when introduced into the body are to bring about a glycosuria and to reduce the temperature. B. WOLOWNIK-CHARKOW (*Virchow's Archiv*, Vol. 180, No. 2) has proven that the glycosuria is due to an escape of excessive amounts of glycogen from the liver, for the liver in rabbits treated with a single, large dose will always be found to contain less glycogen than that of a control animal. If rabbits are fed upon levulose, glucose instead of levulose will appear in the urine, since the levulose is first converted into glycogen in the liver. The adrenalin glycosuria may be inhibited by fever, probably because the germs which cause the fever bring about more active sugar metabolism. If spermin is injected with the adrenalin, the glycosuria will be less marked for unknown reasons. A peculiar and not investigated property of adrenalin is that the temperature of the animals falls 1.5 to 2 degrees about thirty minutes after they have been injected; after six to seven hours normal temperature is again reached. If the animals be rendered febrile by infecting with bacteria, this depression will not be so marked as in the artificial fever induced by brain injury. This peculiarity could only be explained by assuming that adrenalin has a direct influence upon the heat-centers. The nitrogen metabolism was not affected in any manner.

Suprarenal Hemorrhage of the New-Born.—S. OBERNDORFER (*Wien. klin. therap. Woch.*, June 18, 1905) states that common pathological changes found in the suprarenals are hemorrhage, which converts the medulla of the organ into a pulpy mass, and embolism of the suprarenal artery, whereby the entire organ is destroyed. Occasionally, one or both organs will be converted into large bluish tumors, whose contents are fluid blood. This is especially common in the newly-born, and many believe that the motions necessary for artificial respiration are the real cause. In a number of cases observed by the author, however, artificial respiration was not resorted to, and it is likely that severe labor, particularly if the child is in the breech position, will furnish the necessary trauma to rupture the friable suprarenal tissue and thus give rise to a hematoma. If both organs are affected the symptoms are those of Addison's disease, and death rapidly sets in.

PHYSIOLOGY.

The Origin of the Sugar of Pancreatic Diabetes.—A burning question in physiology to-day, according to E. PFLÜGER (*Pflüger's Archiv*, May 15, 1905), is whether the large amounts of sugar excreted in pancreatic diabetes are derived from fat or albumen, or from both. In order to answer this question a careful investigation was made by the author. Dogs were fed upon large quantities of proteid food, which contained neither carbohydrate nor fat. Such food was found to be codfish, which in winter and spring contains no glycogen nor glucosides, and only traces of fat. With such a diet pancreas-free dogs excrete for months such large quantities of sugar (amounting to 30 per cent. of the body-weight) that the sugar cannot possibly be derived from the glycogen or other form of carbohydrate stored up in the body. The excreted sugar, moreover, weighs more than the proteid substance of the body. The sugar, therefore, is derived either from the fat of the organism, or from its proteid and that of the food. The immense amount of sugar, however, did not exceed that which might theoretically be derived from the fat stored in the body. In spite of the abundant albuminous diet the dogs emaciated to the very bones, as if they had been starved, and only the brain and heart remained intact. One marked difference between these and dogs that were actually starved is that in the former the fat alone mostly disappears. A second difference is that in the diabetic animal at death the weight of the liver exceeds that of the liver of the healthy animal. The enormously large diabetic liver has the normal chemical composition, and thus behaves exceptionally like the brain and heart of starved animals. This is explained by the fact that the liver by continuous effort in its struggle for existence with other organs, particularly for food, maintains its functional capacity. The most plausible explanation of diabetes is that the formation of sugar is the work of the cell-substance of the liver, by which not only glycogen, but also fat, is transformed into sugar. Every stimulation of the liver cell, either by innervation, or by carbon dioxide, phloridzin, adrenalin, or other poison, increases the production of sugar. If the organism is fed on large quantities of proteid, then the liver must naturally work over many nitrogenous derivatives of albumin. The more proteid is thus offered to it, the more its cells are stimulated, and thus its sugar-forming function is increased. The administration of ammonium carbonate similarly stimulates the liver cells. Besides, the administration of large amounts of proteid increases the entire bulk of the liver cells. It may thus be understood how in different individuals very different quantitative relations exist between proteid metabolism and sugar-formation, and why, at the lowest ebb of albuminous metabolism, any poison or other irritation acts as a stimulus of the liver cells, increasing the sugar-production, without an accompanying rise in the metabolism of proteids.

Effects on the Rate of Transformation of Glycogen into Dextrose.—It was found by C. H. NIELSON and O. P. TERRY (*Amer. Jour. Physiol.*, August 1, 1905) that by increasing the dextrose, which is a product of the decomposition of glycogen, the rate of this decomposition is retarded. This agrees with the facts that the products of a chemical reaction retard that action, and that when the blood is rich in sugar, there is a decreased transformation of the glycogen into dextrose. It is also seen that calcium chloride has a retarding action, and sodium citrate an accelerating action, on the breaking up of glycogen. This agrees with the fact that such salts as sodium citrate, acetate, etc., are used as therapeutic agents to increase elimination, probably by stim-

lating the cell-substance and its enzymes, possibly by making the cell membranes more permeable. It also agrees with the fact that calcium chloride has a retarding action in elimination, especially in salivary secretion and inhibiting the secretion of sugar in phloridzin diabetes, as shown by O. H. Brown and M. H. Fisher, working independently. This latter fact may possibly be explained by the calcium chloride lessening the permeability of the kidney membranes; but possibly by retarding or inhibiting the transformation of the liver glycogen and the muscle glycogen into dextrose.

The Properties of Thalassin.—In the tentacles of the sea anemone, CHARLES RICHET (*Plüger's Archiv*, June 17, 1905) has discovered a powerful poison, which he terms thalassin. This is soluble in 95 per cent. alcohol, is not destroyed by heat, and is widely distributed among marine animals. In doses of one-thousandth of a milligram per kilogram of body-weight, injected into dogs, it causes itching, biting and sneezing, and a congestion of the mouth and conjunctiva. A larger dose causes stoppage of the heart's action. This poison is an antitoxin for another poison which is also found in the tentacles of the sea anemone. This animal may be said to possess a toxin having two components, namely, congestion, whose injection into an animal makes the latter more susceptible to its action, a property which is called anaphylaxis; and thalassin, whose injection into an animal makes the latter less susceptible to the action of congestion. This property is called prophylaxis.

The Immediate Effect of the Accelerans and the Vagus upon Automatically Contracting Strips of Heart Muscle.—That the impulse conducted along the heart from base to apex is carried by the muscular substance itself is the thesis maintained by H. E. HERING (*Plüger's Archiv*, May 31, 1905). Independently contracting strips of mammalian heart-muscle are independently of one another affected by the centrifugal heart-nerves, not only as regards their strength of contraction, but also as regards its frequency. The extra cardiac centrifugal heart-nerves do not conduct the excitatory impulse from auricles to ventricles, if the muscular connection between these has been severed. Changes in the strength of auricular contraction are not followed by corresponding changes in the strength of the ventricular contractions, even when the former have been brought about through the influence of the nerves.

The Specificity of the Digestive Ferments.—It has been found by K. KIESEL (*Plüger's Archiv*, May 31, 1905) that the proteolytic and rennetic ferments of the dog and cow are specific in their action on the casein of the animal furnishing the ferment, with the exception of the trypsin and pancreatic rennin of the dog. The latter two have a greater affinity for the casein of the cow than that of the dog. These results show that the ferments and the casein of the various species of animals have at least a different molecular structure. The differences between the various kinds of casein have for a long time been recognized, but until now the specificity of only the rennetic ferment has been known. The specificity of the gastric ferments with respect to casein furnishes another argument in favor of the natural feeding of infants, and explains the difficulty in the digestion of cow's milk by young infants.

OBSTETRICS AND GYNECOLOGY.

Spinal Stovainization in Gynecology.—The fatal accidents, the discomfort after the administration, the necessity of skilled assistants with a general anesthetic have led many surgeons to frequently use a local anesthetic. In spinal cocainization the gynecological

region participates in the anesthesia as well as the lower limbs, the inguinal and perineal regions, although this form of anesthetic for laparotomies has been given up because of the variable height of anesthesia, the difficulty of holding the intestinal pads in place and the necessity of using maximum doses. Incited by the recent communications of Dukelus and Chaput on stovaine, and because of its comparatively innocuous properties, as proved both by laboratory and clinical experiments, T. A. DALERIS (*La Gynécologie*, Feb., 1905) has used spinal stovainization in gynecological and obstetrical operations. At the time of anesthesia there was absence of all reaction of vomiting, sweats, pallor of the face, increase in pulse-rate, all of which are phenomena observed with cocaine. Five cgs. can be safely given as a maximum dose for gynecological operations of average duration. In general surgery stovaine has all the advantages and few of the disadvantages of cocaine. In long gynecological operations 7 to 8 cgs. may be used, which amount is within the domain of perfect safety. A modified Tupper's needle may be used with a beveled end and an opening on the side so that the injection may be given an upward direction. Using the method of Guinard, the cerebrospinal fluid is drawn into the barrel of the syringe and the mixture, new opalescent, is injected into the spinal canal. With 7 to 8 cgs. the anesthetic always goes above the pubes, at times to the mammary line, in the majority of cases between the xiphoid and the umbilicus, but the genital region is always perfectly insensible. The anesthetization goes rapidly to the lower limbs. After ten to fifteen minutes it attains its maximum degree, at which time the perineum and anus are anesthetized. The insensibility of the uterus comes sooner than that of the skin at the same level, a fact especially noticeable in obstetrics during labor where the contractions are scarcely perceived by the patient after three or four minutes, although in reality they have become more energetic. With a dose of 3 cgs. the anesthesia lasts forty minutes, and then gradually decreases. Ten minutes after the injection there is noticed a complete relaxation of the perineal muscles, the levator ani and the external sphincter. The anus opens spontaneously, a fact to be considered to insure protection of the operative field. This can be done by a preliminary tampon in the rectum. Urine is not expelled except by mechanical pressure. The uterine musculature contracts energetically in the gravid state. The oxytocic power of stovaine occurs either during labor or during pregnancy. Pregnancy is a contraindication to this use of stovaine, as abortion or premature labor is apt to result. Contracting of the muscle in the non-gravid uterus is also marked. A case is on record in which a Hegar bougie was forcibly expelled from the uterus. This awakened contractibility of the uterus may prove of service which alone will be determined by further experience. Furthermore, the contraction of a subinvolved uterus is made more complete and hemorrhage is lessened. The subjective phenomena observed at the time of the anesthesia have been almost nil. On the other hand, in 12 cases out of the 27, quite serious symptoms followed some days after the spinal injection, such as severe headache, ocular and spinal pains, vertigo, nausea and vomiting. On the average the symptoms came two days after the injection, at times the spinal pain came on at the end of twelve hours. Generally, by the fourth to the fifth day, the symptoms had disappeared, but in four cases they lasted until the tenth and twelfth days, hindering somewhat alimentation. In the treat-

ment of these after-effects it was found that quinine was best for the headache and spinal pain. In six cases good results were obtained by spinal puncture and the withdrawal of 10 c.c. of the cerebrospinal fluid. In conclusion, the writer believes that spinal stovainization has its place in a number of gynecological and obstetrical operations, in spite of the postoperative symptoms mentioned. But, on the whole, none of these symptoms were of a character sufficiently grave to condemn its use.

Can the Bossi Method be Recommended to the Practitioner?—Based on extensive observations and personal experience, DÜHRSEN (*Archiv f. Gyn.*, Vol. 75, No. 2) returns a negative answer, and sharply criticizes the cases reported from Leopold's clinic. He claims that many children who died during birth might have been saved if the vaginal Cæsarean section had been employed instead. Only an expert obstetrician should venture to employ the instrument, as the severe cervical tears and the necessity of having to apply a high forceps often present severe difficulties. The modern specialist is also perfectly familiar with vaginal Cæsarean section, and this permits the delivery of the child within a few minutes even where the cervix is closed and rigid, while the application and use of the Bossi instrument requires considerable time. Where the cervix has begun to dilate, the elastic bags give the same result with much less danger than the dilator. Dührssen reports two more cases of vaginal section which ended favorably for both mother and child. The one was an eclampsia, the other a narrow pelvis with an overdue child and a rigid cervix. In the latter class of cases the vaginal Cæsarean section has the advantage of relaxing the tension of the lower uterine segment and thus diminishing the risks attendant upon a version.

Toxemia of Pregnancy.—Following up a former important contribution upon this subject, W. S. STONE (*Med. Rec.*, Aug. 19, 1905) reports seven additional cases with urinary determinations. From these studies he concludes that the theory which places the pernicious vomiting of pregnancy upon a hysterical or reflex basis is without foundation. The mental symptoms usually stamped hysterical are essentially cerebral manifestations of disordered hepatic function, as evidenced by the urinary changes. Whereas the lesions presented in pernicious vomiting of pregnancy and eclampsia are in the majority of cases different. Yet there is clinical and pathological evidence that they are closely related. Symptoms of either may be present without change in the urine so far as ordinary tests show, but the persistent presence of even a trace of albumin, especially if accompanied by casts, and a persistent increase of indican demand a more complete examination, which seems best accomplished by a determination of the total nitrogen and its partitions. He recommends the incorporation of the test for indican in ordinary clinical tests because errors of diet and intestinal intoxications seem to be important contributing factors in both of these conditions.

Ulcer of the Stomach and Pregnancy.—Mild dyspeptic troubles and subacute gastritis are of frequent occurrence during pregnancy, but ulceration is rare. M. LE PLAY (*Annal. de Gynecol. et d'Obstet.*, May, 1905) describes the case of a woman twenty-seven years old, six months pregnant, who had vomited almost continuously for over three months. Her stomach was dilated and very tender. Later she passed large quantities of blood from the bowels and had several attacks of hematemesis in rapid succession. She

rapidly became very weak and died after presenting a clinical picture resembling progressive pernicious anemia. At autopsy the larger curvature of the stomach showed an ulcer 12 cm. x 9 cm., with raised margins. The base extended to the peritoneum, but there was no perforation. There was marked sclerosis of all the adjacent vessels. Owing to this condition of the blood-vessels, the nutrition of adjacent areas suffered and had undergone degeneration, offering but feeble resistance to the action of the acids of the gastric secretion. The writer considers that pregnancy by favoring sclerotic changes in the blood-vessels would thus predispose to the formation of a gastric ulcer.

Malignant Embryoma of the Ovary.—Two cases of this rare form of ovarian tumor have been reported by H. T. HICKS and J. H. TARGETT (*Jour. Obstet. and Gyn. Brit. Emp.*, Aug. 1905). One case occurred in a girl fourteen years old who entered the hospital with a high temperature, rapid pulse, and a rigid and tender abdomen. A large tumor rose from the pelvis and extended to the umbilicus. After operation the patient remained well for three months, when she returned to the hospital suffering from ascites and rapid wasting. At a second operation a large quantity of serous fluid was evacuated, sessile and pedunculated growths studded the intestines and omentum and a large mass extended deeply into the pelvic cavity. After paracentesis had been performed five times the patient died seven months after the first operation. Microscopical examination of sections of primary and secondary growths showed the tumors to be composed of tubules and cysts, nodules of cartilage and bone, epithelial pearls and a groundwork of fibrous, muscular and fatty tissues. The second case occurred in a girl, six years old, who died two months after operation. The manifestations of recurrence and the microscopic findings were similar to those of the first case. These rare tumors usually occur in young adults, but may be met with in childhood. They may attain a large size, are usually pedunculated and devoid of adhesions unless the pedicle has become twisted. Secondary growths are frequently restricted to the peritoneum, they may be of the same composite structure as the primary growth or be wholly composed of sarcomatous elements. Pain and ascites are constant symptoms. Ovarian tumors exhibiting an irregular disposition of embryonic elements are very liable to be malignant.

Cystoscopy of the Female Bladder.—There has been much advance toward the perfection of cystoscopic methods of late, but after testing many instruments L. LUVS (*Annales de Gynecol. et d'Obstet.*, May, 1905) advises the use of the simple endoscopic tube which has many advantages over reflecting or refracting cystoscopes. In the simple tube vision is direct and the parts are seen in normal position under natural conditions since the condition of the bladder walls is not altered by distention with water. The distention alters the color of the mucosa and interferes with a proper examination of inflamed vessels or areas. In many cases of cystitis it is impossible to distend the bladder sufficiently to permit of the use of the prism cystoscope. With direct vision the difficulties met with in cases of pyuria and hematuria are not present to the same extent as when the refracting cystoscope is used. This direct method also allows of the direct application of various remedial agents to the mucosa of the bladder, which is often a distinct advantage. The writer finds that catheterization of the ureters can be performed with more certainty and with less danger of introducing

bacteria from an already infected bladder by using the simple endoscopic tube.

Spontaneous Amputation of the Tube.—Among 1041 laparotomies performed in the clinic of Pestalozza, Florence, since 1894, there were two cases of spontaneous amputation of the tube. M. GUICCIARDI (*La Gynecol.*, May, 1905) describes these two cases together with a third that came under his observation. In the first case a hysterectomy was performed for multiple fibroids. The right appendages were normal, the uterine end of the left tube was normal, but ended in a rounded stump in which there was no trace of an opening. The missing portion of the tube was not found. In the second case amputation of the tube followed torsion of the pedicle of an ovarian tumor. In the third case the abdomen was opened for the removal of a cystic tumor felt through the posterior vaginal fornix. The tumor proved to be a sactosalpinx which had become inverted and spontaneously amputated from the uterus and adherent to the anterior layer of the broad ligament.

Uterine Metastasis in Cancer of the Stomach.—Metastatic deposits in the uterus in cases of primary involvement of other organs is very uncommon. A. COUVELAIRE (*Annal. de Gynecol. et d'Obstet.*, May, 1905) reports the case of a primipara thirty-one years old who was seized with severe vomiting and pain in the stomach when ten weeks pregnant. A hard tumor in the epigastrium led to the diagnosis of cancer of the stomach. There was a progressive cachexia, ascites and edema of the limbs and abdominal wall being noted in the eighth month. A vaginal examination 301 days after cessation of menstruation, revealed an induration of the fornices, cervix and lower uterine segment. A condition which was not present a month previous. A dead child was removed by Cæsarean section and the uterus removed. The patient died fifty-one days after operation. The autopsy showed a general adhesive peritonitis with malignant growths in the stomach, intestines, uterus and vagina.

The Appendix and Pelvic Disease.—R. PETERSON (*Am. Jour. Obstet.*, Aug., 1905) in a series of 285 cases in which the abdomen was opened for other purposes, removed the appendix regardless of its apparent condition. The microscope showed about 50 per cent. to be normal. Inasmuch as many appendices which looked diseased were shown microscopically to be normal, and vice versa, the writer concludes that when the abdomen is opened for any reason, it is wise to remove the appendix in all cases in which a prolongation of the operation would not be too profound a shock. When there is disease enough in the pelvis to demand operation, there is reason to expect that the appendix may be diseased also, which, if left behind, may prove a subsequent source of suffering to the patient.

Menstrual Urticaria.—D. J. MILLER (*Med. Rec.*, May 13, 1905) epitomizes the literature of this condition and describes its occurrence in a girl of fifteen years, who menstruates regularly, and whose attacks of urticaria make their appearance seven or eight days before and cease two to three days before each period. Occasionally the urticaria persists until the flow begins, free from attacks and she is perfectly healthy in other rarely during the first day or two of its course. During the intervals between the periods the patient is quite respects. The urticaria itself is of the ordinary type.

Tuberculosis and Pregnancy.—According to the statistics of Fellner, pregnancy tends to increase the susceptibility of the individual to tuberculosis. Cases occurring during the pregnant state are severe, with a marked tendency to laryngeal involvement. The preg-

nancy is as a rule not interrupted, but it is not uncommon for an advanced case of phthisis to be delivered at full term, the child dying in a few days and the mother in a few days or weeks. G. E. MALSBARY (*Am. Jour. Obstet.*, July, 1905) has been led to consider that tuberculosis in itself predisposes to pregnancy. In view of the special susceptibility, pregnant women should be protected from tuberculosis as from other infectious diseases. The habit prevalent among pregnant women of going into retirement, should not be tolerated, if such retirement precludes hygienic surroundings, pure air and sunlight. Fresh air, exercise and proper diet combined with the use of tuberculin and creosote constitute the essentials of treatment. The desirability of artificial interruptions of pregnancy is problematic in these cases, especially when the objective symptoms do not show progression of the disease. As far as pulmonary tuberculosis is concerned, the operation is of no especial benefit.

Lacerations of the Cervix Uteri.—ARTHUR H. GARDNER, in an article embodying an exhaustive résumé of the opinions held upon this subject by the most distinguished obstetricians (*Med. Rec.*, Aug. 26, 1905) draws some conclusions. Many ills are the result of unrepaired lacerations of the cervix. These tears may be lessened, both in frequency and extent, by allowing more time for dilatation and by a more judicious resort to either forceps or podalic version. The most frequent cause of subinvolution and prolonged convalescence is unrepaired lacerations, but, in all probability, many of the morbid conditions ascribed to lacerations are rather an infection of the lacerated surface. Many cases of severe hemorrhage are due to unrecognized tears, and immediate repair offers the best means of controlling such bleeding, and also of preventing infection of the torn surfaces. Primary tracheloplasty is easily and quickly done, whereas a secondary repair is a difficult and tedious procedure. Even in case union should not obtain in immediate repair, the condition of the woman is none the worse, whereas if successful, the patient is spared the subsequent ills which cervical lacerations sooner or later entail. Medical students should be taught that where hemorrhage persists with a well-contracted fundus, to look for spurting vessels in the torn cervix, and to suture. As to immediate repair without bleeding, they should be taught the advantages, and impressed with the evils which might arise from poor technic and lack of asepsis.

Intestinal Obstruction and Pelvic Operations.—The frequency of intestinal obstruction occurring as a postoperative condition in pelvic surgery is shown by the statement of E. M. CONNER (*Practitioner*, Aug., 1905), that it is relatively frequent. He considers the operation which stands pre-eminent among all others in causing this complication, to be supravaginal hysterectomy. While adhesions may be present without producing any symptoms, the presence of attacks of localized abdominal pain, associated with vomiting, after an abdominal operation, and especially after a pelvic one, should raise the question of the advisability of exploration. The intestinal obstruction usually results from the intestine forming a kink, or better a volvulus, using the uppermost adhesion for a fixed point on which to rotate. The cause of this volvulus, in far the majority of cases, is an increase of pressure within the bowel, produced by gas formation, meteorism. The origin of the meteorism is to be found in some error of the diet or the digestion. Sometimes strong peristalsis draws out the adhesion into the form of a band, under which a coil of small intestine may be ensnared. Meteorism pro-

duces a volvulus in almost every obstructed loop. These adhesions antedate the obstruction, showing that the latter is merely a complication, and raising the suspicion that, for every case in which this does occur, the probability is, that there are many in which it does not occur. The presence of the uterine stump among the small intestines undoubtedly disposes them to become adherent. How this adhesion takes place is not quite clear. Perhaps the most favored suggestion is that the row of sutures and knots offers the opportunity for the bowel to adhere. In consequence of the sutures being tied firmly, if not tightly, the tissues within their grasp are lessened in bulk, fluids being squeezed out of them. There is a tendency for each stitch to lie in a groove of its own making. The fluids which have been expressed in tying the ligature will swell the bulk of the contiguous tissues. The slight injury, thus inflicted, calls forth a reparative inflammatory reaction, augmented later by the irritative action of the aseptic stitch, causes a small effusion of lymph which soon covers the stitches. In the case of a uterine stump, with gaping of the peritoneal edges, the formation of adhesions with the intestines is invited.

PEDIATRICS.

Infant Feeding.—F. S. CHURCHILL (*Journal A. M. A.*, May 28) discusses the embarrassments of infant feeding when breast milk is not available, and the unsatisfactory results of the common practice of diluting cow's milk with water in such cases. He summarizes practically as follows: Cases of difficult feeding in infancy are: (1) Those of fat indigestion; (2) those of sugar indigestion; (3) those of proteid indigestion. Each of these may occur alone or in combination with the others. Proteid indigestion is most common, but fat indigestion is also frequent. Each must be treated individually, the form of indigestion present must be ascertained if possible, and appropriate measures be adopted. The treatment is almost exclusively dietary; the fats and sugar can be regulated by varying the amounts of cream and sugar in the food. The composition of cows' milk, with its high caseinogen and low lactalbumin content must be remembered in treating proteid cases, the caseinogen must be cut down or eliminated, if need be, and the lactalbumin retained. This twofold object is attained by feeding whey. Increase in quantity and quality of the food must be made gradually. In conclusion, he suggests the desirability of careful study of artificially fed infants and publication of the results.

Pyloric Stenosis in Infancy.—CHARLES M. SCUDDER (*Journal A. M. A.*, May 20 and 27) reviews the literature of pyloric stenosis in infancy, and describes the symptoms, diagnosis and treatment. He recognizes two groups, the subacute or chronic, and the acute fulminating cases. While most cases are fairly typical, in some the differential diagnosis is difficult, and a careful study of each symptom and the sequence and grouping of symptoms should be made till the diagnosis is reached by a process of exclusion. He has little faith in the medical treatment, and believes that the condition is practically hopeless without operation. The results of operations since 1898 show a saving of over 50 per cent. of the cases, of which probably all would have died if let alone. An analysis of the fatal cases shows that many of them were due to mistakes or errors of technic, too late operation, etc. The operation should be rapid, free from causes of shock, sepsis or hemorrhage, the parts to be handled gently and isolated outside of the abdominal cavity. The Lorta operation

is condemned. Pylorotomy is too severe and pyloroplasty is not recommended save in exceptional cases. Some form of gastroenterostomy is best for most cases, but owing to the shortness of the infant mesentery and other reasons the anterior operation should be avoided if possible. The Finney operation of gastro-pyloroduodenostomy may be suitable in some cases, or, if not feasible, Köcher's gastroduodenostomy may be useful. Aftercare is of vital importance, and, if possible, an expert in feeding a baby should have charge. Absolute quiet is essential, and rectal feeding may be needed for a few days. Scudder does not discuss the etiology to any extent, but thinks that a congenital hyperplasia may occur and a spasmodic contraction of this, after birth, is frequent if not the rule.

PRESCRIPTION HINTS.

Asthma.—

℞ Potassii nitratis.....3ss
Pulv. anisi fruct.....3ss
Pulv. stramonii fol.....3i

M. fiat pulv. Let patient inhale smoke of a thimbleful of this powder, formed into a cone and lighted at the top. (Sawyer.)

Or the following:

Potassii nitratis.....3ss
Pulv. stramonii flor.....3i
Pulv. anisi fruct.....3ii
Pulv. lobeliae inflatae.....3i
Pulv. fol. theae sinensis nig.....3i
Ol. eucalypti.....℥xv

M. fiat pulv. Sig. To be burned as above, using a thimbleful at a time.

A good asthma powder for emergency use is one part, by weight, of saltpetre and two parts of black tea, powdered. (Sawyer.)

Hyperchlorhydria.—

℞ Magnesiae ustae.....3i-3iv
Crete preparatae.....3ss-3ii
Bismuthi subnitrat.....3i-3ii

M. et fiat chart No. xii.

Sig. One mixed with a wineglassful of milk or water an hour after each meal. (Reed.)

Or—

Cerii oxalat.....3iv
Bismuthi subcarb.....3viii
Magnes. carb. levis.....3ii

M. Sig. One-fourth to a heaping teaspoonful in water two hours after each meal. (Stockton.)

In cases in which the alkalies are not well borne, the following prescription occasionally succeeds:

℞ Extr. belladonnæ.....gr. i-gr. ii
Ext. yerbae santæ.....3i

M. et fiat mass. in pillulæ No. xvi dividend.

Sig. One after each meal, or large doses of bismuth as follows:

℞ Bismuthi subnit.....3vi to 3i
Fiat. chart. No. xii.

Sig. One mixed with milk or water half an hour before each meal.

Occasionally the following is a useful remedy:

℞ Argent. nitrati.....gr. ii-gr. iii
Ext. belladonnæ.....gr. i
Bismuthi subnit.....3ii

M. et fiat mass. in capsulæ, No. xvi dividend.
Sig. One after each meal. (Reed.)

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THE CHATTANOOGA MEETING.

THE meeting of representative Southern men, which has been called for November 9 and 10, at Chattanooga, is one that will be of the greatest importance to the entire country, though the South is naturally more immediately interested. Two subjects are announced for discussion: *First.* A uniform system of quarantine in yellow fever. *Second.* A reform in the matter, not only of landing an undesirable class of immigrants in Southern ports, but of the alleged custom of distributing them from Northern centers throughout the South. This second subject is thus stated in the call:

"Again there are coming into the United States at the present time a larger number of foreign immigrants than were ever known in our country's history. Among these are great masses who are wholly undesirable and whom it will be impossible to assimilate with our institutions. There is apparently a desire, or tendency, to bring many of these undesirable immigrants to Southern ports, and also to distribute them from Northern centers into the South. The South will welcome desirable immigrants from all lands, and it has already racial problems of such gravity that no others should be invited until proven safeguards are provided in advance of their coming."

As will be seen, the question of physical health comes first, as it justly should, for it is very im-

portant, and to the country at large just now represents the key-note of the situation. An outbreak of yellow fever, with no common purpose or plan to meet it, with no settled system to hold it in check, throws the Southern people, according to their own reports, into a panic that produces scenes and acts of almost indescribable inhumanity. Shotgun quarantines are a disgrace to civilization, and the very remedy, if there is a remedy, is in thoroughly organized concert of action, prepared and elaborated in advance to meet just such emergencies.

Unfortunately, the problem of securing uniformity of legislation in different States is a most difficult one to solve. After years of painstaking effort only two classes of cases, those of divorce and "negotiable" paper, have made any appreciable progress, and it is doubtful if even now, with the object lesson of this last epidemic staring them in the face, this coming mass meeting will accomplish any practical result, unless the aid of the national power is invoked. For with the greed of business enterprises, and the unwillingness of municipal authorities to interfere with commercial conditions (by the enforcement of a rigid quarantine at the beginning of the outbreak), it is only the strong arm of Federal authority that will prove able to prevent the constant recurrence of these epidemics.

Again, although the question of sanitation is put first in this call for reform, it is in reality the second subject, that of immigration, which is of the greatest interest to the originators of this movement, as it lies close to the very roots of permanent order in the South. Yellow fever, as they frankly say themselves, when present, is a matter of but a few months at the most, and there are sometimes years between the outbreaks. But if the labor conditions of the South become complicated, and racial problems are multiplied, the South will become, says a Southern writer, "the theater of such continuous and appalling disorder as will shake the whole section to the center and affect other centers as well."

For, it seems that some of the Southern planters, having become wearied of negro labor, have been considering the employment of help from Southern Europe, while others, acting in concert with Southern manufacturers whose eyes are fixed on Oriental markets for cotton goods, have been preaching the advantages of coolie labor, and here, as a Georgia editorial says, "would be a mess that would do as much damage as if served hot from the devil's kitchen."

The South is not under the dominion of the negro, but they are there in large numbers and there to stay, so that in remedying their deficiencies it will not do to force them into competition with a race like the coolies, who would arouse the very worst antagonisms of their nature, unless an attempted repetition of the Sepoy mutiny or the West Indian massacre are the objects to be attained. This the conservative element in the South fully recognize, so that to them the last of the two subjects will be the first, while to the medical profession and to the other sections of the country at large, the yellow fever problem will undoubtedly be the burning question.

Let us, however, hope that by the union of the two, some solution may be found that will prove a permanent blessing for both, even if in disguise.

STALAGMOMETRY, A NEW METHOD OF CLINICAL RESEARCH.

THE resources of physical science have been amply drawn upon within the past few years in the zealous investigation of the occult phenomena of disease. No less in pathology than physiology does physics play an important rôle. Among the numerous procedures of the most modern research laboratories may be mentioned the determination of the specific gravity of the various body-fluids, cryoscopy or determination of the freezing point of the latter, the estimation of the coagulation time of the blood, the investigation of electrical conductivity of the various secretions, of their viscosity, polarization and osmotic pressure. Only a few of these modes of investigation have proven of any clinical value. Cryoscopy is no longer accorded much weight as an aid in diagnosis. Another method of investigation has been revealed, and according to present indications, it bids fair to become a valuable adjunct to clinical diagnosis.

The essentials of this method consist in the determination of the relative degrees of surface tension possessed by the body-fluids. A painstaking research into the significance of this force in physiology and its possible applications in practical medicine was first made by Prof. J. Traube (*Pflüger's Archiv*, Dec. 1, 1904). A further investigation based upon an extensive amount of clinical material has just been reported by J. Traube and F. Blumenthal (*Zeitsch. f. Exper. Pathol. u. Therap.*, July 21, 1905). In order to gain a clear idea of the nature and importance

of this new diagnostic test, it is necessary to consider the part that surface tension plays in the organism.

Prof. Traube is one of the ablest exponents of the doctrine that physical forces underlie most of the important vital processes. Of these forces, the one that enters largely into the most diverse manifestations of life is surface tension. Otherwise known as capillarity, this force represents the tendency on the part of liquid surfaces to contract. The familiar method of measuring the surface tension of a liquid is by means of a capillary tube. But Traube invented a simpler method. He devised an instrument, which he named the "stalagmometer," which measures the number of drops that might be obtained from a given volume of liquid. The stalagmometer consists of a simple glass tube, bent in a certain manner, graduated at one part, and provided at its upper end with a rubber bulb, by means of which the liquid may be drawn up into the narrow bore. The lower end of the tube is slightly expanded into a flat surface, from which the drops may be allowed to fall. The greater the number of drops the less is the surface tension of the liquid.

A great many physiological phenomena, which have been attributed to the operation of osmotic pressure, are really the result of differences of surface tension. Thus, Traube discovered that a solution of low surface tension will pass through a membrane into a solution of higher surface tension. The surface tension of a liquid largely depends upon the nature of the substances dissolved in it. Thus phenol diminishes the surface tension of its solvent. A fact of great significance in relation to the subject of intestinal absorption is that peptones reduce to a great degree the surface tension of the liquid in which they are dissolved, while proteids do not. As the result of this diminution of surface tension, the peptones pass from the lumen of the intestine into the blood. This explains why the stomach and intestine contain only dilute solutions of peptone, as determined by Bernstein, for these are absorbed as rapidly as they are formed.

In digestive disorders in which the process of absorption is disturbed, there is a considerable accumulation of peptones, with a resulting greater diminution of surface tension. This would be indicated in the stalagmometer by the larger number of drops obtained from a given volume of the solution. For water the figure is

53; for normal stomach contents it varies from 63 to 66. Traube and Blumenthal determined the figures in a large number of cases of diseases of the stomach, and in cases of gastric disturbance secondary to some constitutional disorder. The severer the disease the higher is the stalagmometric index. Thus, in peracidity, atony, peracidity with atony, subacidity, carcinoma of the pancreas, anemia, etc., the figures ran between 65 and 68. In carcinoma, pernicious anemia, pyloric stenosis, chronic gastritis, and ulcers, the figures were between 67 and 74. It is evident from these sources that this method of investigation may serve to indicate the relative degree of severity of a gastric lesion. Beyond this, one can expect no diagnostic advantage from this test. But its extreme simplicity of operation recommends it as an initial step in the routine examination of stomach contents.

A second field for the application of this test is the study of the functional capacity of the kidneys. When these are healthy the surface tension of the urine is much greater than that of the blood. In nephritis the surface tension of the urine is diminished, which explains the disturbances in the secretory activity of the kidneys. It is obvious that if the urine had a surface tension equal to or less than that of the blood, the kidneys would be unable to secrete. As an instance of the wise provision for maintaining the high surface tension of the urine, may be mentioned the following: Capillary-active substances which diminish surface tension (such as phenol, indol, benzoic acid, etc.) on their passage into the urine are transformed into compounds (phenolsulphuric acid, indoxylsulphuric acid, hippuric acid, etc.), which are markedly capillary-inactive, maintaining the high surface tension of the urine. If substances like the former were allowed to enter the urine, the kidneys would soon cease to functionate. In unilateral kidney disease a stalagmometric test of the urine would be of diagnostic value. It is important to note that the presence of albumin or sugar in the urine has no marked effect upon the surface tension of the urine. Of great significance is the fact that diseased kidneys lose the capacity of holding back in the blood the capillary-active substances, to which they become permeable. The presence of these in the urine diminishes its surface tension, which necessarily embarrasses the further secretory powers of the kidneys. These facts have been established in cases of nephritis, cardiac disease, cirrhosis of the

liver, pneumonia, lysol poisoning, articular rheumatism, scarlet fever, tuberculosis, cerebral lues, and other diseases, either localized in the kidney or affecting it from without.

The nutritive exchanges between the blood and lymph, and the lymph and tissues, respectively, have been attributed to two factors, namely, osmosis and the selective activity of the cells of the capillary and lymphatic walls. Yet, these forces are not sufficient to explain all the phenomena of the nutritive exchanges both in health and in disease. Thus, blood pressure largely determines the flow of the nutritive elements of the blood in the direction of the lymph. The rapidity of osmosis also depends in some degree upon the extent to which the opposing fluids are soluble in each other. Chemical forces, the frictional coefficients of the opposing fluids and the nature of the membrane itself, must all be considered. And if to these be added the surface tension of the blood and lymph, one may gain a complete picture of the mechanism of the bodily exchanges. It is quite probable that a routine examination of the relative surface tensions of the lymph and blood will be of diagnostic value in diseases giving rise to transudates, and in hemophilia, idiopathic edema, etc.

From the view-point of pharmacology, a promising field of research is afforded by stalagmometric observation. It is pointed out by Traube that the alkaloids, antipyretics, diuretics, narcotics, excitants, etc., besides belonging to the rapidly osmosing class of substances, and, besides, being freely soluble in the lipoids of the cellular membranes, at the same time markedly diminish the surface tension of the liquids in which they are dissolved. This diminution serves to explain the marked change in the surface tension of the circulating fluids, which occurs in various drug intoxications, which as a result cause a reversal of the direction of the fluid exchanges. The determination of the relative efficiency of diuretics may ultimately depend upon their degree of capillary activity, just as the latter has been found by Traube to be the test of the relative value of the narcotics. He has actually discovered an exact numerical relationship between narcotic power and surface tension.

It is noted that amyl alcohol contained in fusel-oil, by lowering surface tension and impregnating the walls of the biliary passages, causes an abnormal rapidity in the exchanges that occur through them. On the other hand, part of the

therapeutic value of ethyl alcohol as an aid to digestion, is attributed to the fact that, by lowering surface tension, the alcohol accelerates intestinal absorption, particularly that of the fats.

One very important application of these studies on surface tension is to the problems of immunity and to the therapeutics of antitoxins. Thus, tetanus toxin travels to the brain by way of the fatty nerve fibers, while antitoxin chooses the vascular path. The toxin penetrates the cells while antitoxin does not. The toxin is dissolved in the lipoids of the brain-tissue, while antitoxin is dissolved in the cerebrospinal fluid. The toxin dissolves red blood cells, while antitoxin does not. It is plain that tetanus toxin osmose and dissolves in lipoids with ease, while tetanus antitoxin does not. Traube suggests that it would be necessary, in order to increase the efficiency of tetanus antitoxin, and probably of other antitoxins, to add to them capillary-active substances, so as to increase their power of traversing the cellular and tissue membranes.

Many other instances of the operation of surface tension in the normal workings of the body and in their pathological modifications, have been noted. Enough have been dwelt upon, however, to indicate that this force is a most potent factor in physiology, and that a recognition of its full value will give it a prominent place among the diagnostic resources of the clinical laboratory.

ECLAMPSIA FROM ANOTHER VIEW-POINT.

THERE is nothing more encouraging in present-day medicine than the larger view as to the causation of convulsive seizures occurring about the end of pregnancy which is coming to be generally accepted. There was a time, not so very long ago, when practically all puerperal convulsions were attributed to some defect of the kidney. The reason for this is not far to seek.

The presence of albumin in the urine was supposed to indicate definitely a lesion of the secreting substance of the kidney. As a consequence, it was supposed that there was in these cases an accumulation of material in the circulation that had failed of excretion because of renal inadequacy. The significance thus attributed to albuminuria has proved on further investigation to be greatly exaggerated. Albumin may be present, especially under conditions in which there is disturbance of intra-abdominal pressure without having any serious ulterior meaning at all. As a matter of fact, it is very

rare for a woman to escape albuminuria during the whole course of a pregnancy. Not infrequently it has happened that young women, who, before marriage, showed signs of albumin in the urine, and to whom the question of the possible existence of Bright's disease had proved a source of worry, were better after a pregnancy or two as regards their renal condition than they had been before.

In recent years attention has also been called to the fact that even the presence of casts with albumin in the urine is by no means a definite indication of the presence of a serious kidney condition. They do indicate that a kidney is sensitive to irritation, and that some irritative process is at work. This irritation need not necessarily proceed to degeneration, however, and in fact never does, unless a condition of lowered vitality is present. Athletes, and especially those who take such violent exercise as long-distance running, rowing, bicycling, and the like, always present casts in their urine after their efforts, but this seldom has any serious significance, if there is not some intoxication at work in their systems at the same time. The kidneys of a pregnant woman seem to be called upon to do somewhat the same kind of extra work as that done by the athlete. Hence, the more satisfying conclusion in recent years—that except in extreme cases such manifestations in the urine of the pregnant should be neglected unless other symptoms of a serious kind are manifesting themselves.

To replace the kidney in the etiology of many cases of eclampsia, other organs have been found from which undoubtedly some of the symptoms at least must be considered to arise. In most cases of convulsions with rapidly fatal termination, it has been found at autopsy that the liver is even more frequently diseased than the kidneys, the pathological appearance being very much like that of an acute yellow atrophy of the liver. It has long been known that acute yellow atrophy occurred almost exclusively in pregnant women, and while it has sometimes been attributed to a specific infection, such, for instance, as produces a corresponding effect in yellow fever, it has generally been thought to be due to some intense toxic process at work in the economy. This opinion was supported by the fact that the hepatic lesions produced by phosphorus poison resembled those of acute yellow atrophy so closely that the two affections have sometimes been mistaken one for the other.

There is no doubt now, however, that in eclampsia the condition of the liver must always be considered, and that treatment must always include this organ in the purview. Unfortunately, when the liver is the main seat of affection, much hope of relief of symptoms by any ordinary remedies is justified.

Within the last few years, another element in the etiology of eclampsia has attracted considerable attention. The ductless glands undoubtedly produce conditions when diseased which may lead to convulsive attacks, not unlike those of eclampsia. It is not surprising that during pregnancy these important structures called upon to do work for two beings instead of one should sometimes prove to be inadequate. Nature has fortunately made provision for the temporary hypertrophy of these organs so as to compensate for this strain upon them. The well-known tendency for the thyroid gland to enlarge during pregnancy has been noted by all observers. At times, however, even this enlargement apparently fails to compensate. On the other hand, not a few of those women who have a cystic enlargement of the thyroid prove during the course of pregnancy to have some thyroid inadequacy, perhaps because of interference with the circulation, and it is particularly in them that some of the milder forms of eclampsia evidently dependent upon inadequacy of the ductless glands have been noted. On the other hand, the enlargement of the thyroid may at times exceed the physiological demands, and in like manner produce a nervous sensitiveness with tendencies to explosive attacks of nerve force resembling convulsions.

Finally, in nervous women, it has been noted over and over again that the strain of pregnancy produces a condition in which there is a lack of nervous equilibrium and a distinct tendency to the occurrence of functional nervous disorders that may manifest themselves apparently in convulsive seizures. This is especially true of women with hysterical tendencies who have heard much of eclampsia and its dangers and have learned to dread them. It has been a subject of frequent remark at medical meetings that the wives of physicians seem to be more liable to eclampsia than other women of a corresponding condition in life. Undoubtedly this is due to the fact that the doctor's wife is apt to know through her husband of any cases of eclampsia that occur in his practice, and may even add to the knowledge thus acquired by surreptitious

reading of medical books. Under these circumstances, it is not surprising that occasionally what are genuine hysterical attacks should be mistaken for eclamptic convulsions. When an examination of the urine disclosed the presence of albumin so common in pregnant women in the old days, the diagnosis of eclampsia was confirmed. If the doctor's wife knew, as was frequently the case, of her albuminuria, then the nervous manifestations were likely to be increased from fright and worry. Not a few of the remedies that have acquired a reputation for the relief of eclampsia have obtained their reputation because of apparently successful use in such cases as these. Hence the large number of drugs that have, at one time or another, gained a temporary reputation as specific for eclampsia.

The whole of this newer and better outlook upon eclampsia is in line with the determination becoming every day more widespread—to view the patient as a whole rather than as suffering from one or more supposedly pathognomonic symptoms. It is not the urinary examination alone that can indicate the extent of the danger. The entire clinical picture must be taken into consideration. There is no doubt now that eclampsia is an intoxication, though not of renal origin alone, but of multiplex etiology. Undoubtedly, the constipation so frequent during pregnancy plays an important rôle in the development of these intoxications. It is in this matter, and from the very beginning of pregnancy, that most can be hoped for in the prophylaxis of eclampsia. The liver lesions that have been described as the basis of the severer forms of the affection owe their origin to an intensely toxic material resembling the substances produced when phosphorus is present in the intestinal tract. Each case, however, must be a separate and individual study. No single drug or set of drugs can reasonably be expected to accomplish therapeutic results in so multifarious a disease. This is the encouraging part of the present situation and the foundation of hope for true progress in the etiology and, consequently, for the more successful treatment of eclampsia.

Cholera Under Control.—The official bulletin issued in Berlin, on September 18, says there were ten fresh cases of cholera and five deaths from noon Saturday to noon Sunday, and three new cases and one death from noon Sunday to noon Monday, making the totals 202 cases and 77 deaths. It was announced on September 19 by the German Government that the cholera has been checked and any danger of epidemic is entirely unlikely.

ECHOES AND NEWS.

NEW YORK.

Bequest to the Seney Hospital.—By the will of the late W. D. Toy, filed in the Surrogate's Office, Brooklyn, N. Y., \$5,000 is left to the Seney Hospital for the endowment of a bed in memory of Lucy A. Toy, wife of the testator.

Medical Society of the State of New York.—The Business Committee, to have charge of the program of the next annual meeting of the Medical Society of the State of New York, to be held in Albany, Jan. 30 to Feb. 1, 1906, appointed by the president, Dr. Joseph D. Bryant, consists of Dr. Leo H. Neuman, chairman, Albany; Dr. Algernon T. Bristow, Brooklyn; and Dr. Herbert U. Williams, Buffalo.

College of Physicians and Surgeons.—The opening exercises of the academic year 1905-6 will be held in the Lower Lecture Room on Thursday, Sept. 28, 1905, at three o'clock P.M. After a brief address of welcome by the president of the university, an address will be delivered by Samuel W. Lambert, A.M., M.D., Dean and Professor of Applied Therapeutics, upon "Some Present Fallacies in Medical Education."

New Medical Directory Out.—This year's edition of the medical directory, issued by the Medical Society of the County of New York, has appeared in the form of a neat, clearly printed and handy volume of more than 600 pages, compact and comprehensive. It includes lists of legally qualified physicians of all schools resident both in New Jersey and Connecticut, as well as in New York City, together with the summer homes of New York physicians who are members of the society. There is also information concerning hospitals and asylums, health department officers and coroners, besides a street directory of physicians in the city.

New Jewish Hospital.—The roof of the new Jewish Hospital of Brooklyn has been completed, so one of the important Jewish charities in the country is soon to be well housed. The society had long been working for money sufficient to build a hospital, when, about a year ago, chance threw a desirable building in their way. This was the Memorial Hospital for Women and Children on Classon Avenue, extending from St. Marks Avenue to Prospect Place. A good sum of money was assured to back the enterprise, and the building of two additions was begun almost immediately. The new wing, together with the complete remodeling and refurnishing of the whole building will cost \$150,000. Of this total, \$100,000 is in hand, and the remaining \$50,000 is to be secured by a fair, to be held in the hospital building the last week of November. All the Jewish societies of Brooklyn will be affiliated in this work, each having its special department. The president of the fair committee is Abraham Abrahams, one of the chief benefactors of the hospital. Its chairman is Nathan S. Jonas.

First Aid on Railroads.—The fourteenth annual meeting of the Erie Railroad Surgeons' Association was held last week in the Hotel Astor. Dr. F. A. Goodwin, of Susquehanna, Pa., presided, and about fifty physicians were present. Papers were read on many subjects, including the following: "The Eyes of Railroad Employees," "Reflex Pains," "Emergency Hospitals for Shops," and "Some Principles to be Considered in the Handling of Railroad Cases." The Erie Railroad requested the associa-

tion to submit some plan or to suggest some course of instruction for certain of the railroad employees on the lines of "first aid to the injured," in order to minimize fatalities in railroad accidents. A resolution favoring the scheme was adopted, and a committee was appointed to formulate some plan of action. Speaking of "Emergency Hospitals for Shops," Dr. C. S. Parkhill, of Hornellsville, N. Y., recommended "emergency boxes" on all trains. "Every railroad should have a special 'first aid' department," he said. "under the direction of a surgeon, and a sufficient number of employees in all departments should receive instruction to enable them to render first aid to the injured."

Country Bred Typhoid in City.—Many cases of typhoid fever are reported from the various city hospitals as due to the conditions prevailing in the summer resorts up the State from which the sufferers recently returned from their vacations. Most of the patients came from Dutchess, Orange and Sullivan counties. The sanitary situation in those regions has been called to the attention of the State Board of Health and an investigation is now under way. Among the patients recently treated in the Presbyterian Hospital was a whole family of five persons, who were taken directly from a train at the Grand Central Station to the hospital. "Practically all these cases of typhoid," said Health Commissioner Darlington, "are now being brought into the city from the country. The drainage conditions at farmhouses and country boarding places and hotels are not of the best and as a result the germs of typhoid often filter into the wells and contaminate the water. The Board of Health, whenever a case is reported here, causes a full history of it to be taken, so that the source of the infection may be traced and measures taken to prevent a recurrence of the disease. The Board of Health has taken especial interest in the sanitary conditions in Dutchess, Orange and Sullivan counties, where so large a supply of the milk of this city comes from, and many of the dairies there were closed until their owners made alterations and repairs in conformity with the regulations. In many instances farmers used the water from contaminated wells in washing milk cans and pails. The amount of typhoid in the city at present is about normal for the present time of the year. According to the department reports the number of cases last week was twenty-three, which is slightly above the average for this season."

Copper to Stop Typhoid.—The application, properties and effect of copper sulphate, for the purification of water supplies, formed a topic of discussion at the convention of the New England Water Works Association, which met in this city last week. D. D. Jackson, of Brooklyn, in a paper on "Destruction by Copper Sulphate of Typhoid Fever Germs," said experiments he had made demonstrated that one part of copper in 50,000 of water was necessary to destroy typhoid germs, and that this was more than could be safely used. No more than one part of copper in 1,000,000 of water could be safely used, he said, and that such a solution would be insufficient to produce any beneficial results. Prof. Henry Krämer, of Philadelphia, in a paper on "Germicidal Properties of Metallic Copper," said that his investigations had convinced him that the introduction of copper foil into water would destroy typhoid germs and that certain forms of lower animal life were also destroyed by it. He said that all drinking

water used in his own family for more than a year had been treated with copper and no ill effects upon the health of any of its members had been observed; on the contrary, he said, their health had never been better. All vegetables used by his family, he said, when eaten raw were first washed in water treated with copper. Prof. Krämer was positive that copper in proper quantities could have no evil effect in the human system. Prof. Herbert E. Smith, of New Haven, speaking on "Toxicological Aspects of the Copper Sulphate Treatment," said that copper poisoning was seldom more than temporary in its ill effects, even in large doses. He said copper did not produce chronic poisoning such as is caused by lead and mercury. A single large dose of copper might produce acute poisoning, he said, but the continued use of small doses for lengthy periods produced no ill effects.

PHILADELPHIA.

Aid to Hospitals.—One of the latest methods of aiding hospitals is the introduction of street carnivals. In the southern section of the city the people have occupied several squares on the street with booths from which refreshments are sold, the proceeds of which will be given to the Methodist and St. Agnes Hospitals.

Factory Laws Violated.—During their visits the State inspectors have found that the factory laws are being violated in many of the mills of the northern sections of the city. The proprietors of these business places are extremely negligent in regard to the sanitary conditions, especially is this true of the cloak and toilet rooms. The labor unions are the chief instigators of the complaints.

Wills Eye Hospital Taxed.—As a result of the many defects found in the school children by the medical inspectors the Wills Eye Hospital is busily engaged in treating these patients. There are many requests for the hospital to furnish not only the medical treatment, but also the glasses which the authorities say they are unable to do under the present system of financing the institution. One of the members of the Board of Directors said the other day that if the institution were properly endowed all school children, or at least those too poor to pay, could be supplied with glasses.

Board of Health Physician Held for Damages.—Having heard of the awarding of damages, Mrs. Mary Fay, of 231 Montrose Street, conceived the idea of obtaining an easy livelihood hereafter, and accordingly entered suit against Dr. Alfred Marshall, a medical inspector of the Board of Health for unlawfully quarantining the said Mrs. Fay's home. The woman holds that after her child had been taken to the Municipal Hospital the sign of diphtheria, the disease from which her child was suffering, should not have been tacked upon her door. Then, too, she claims the smallpox placard which was placed upon the house was there unlawfully, since, in her opinion, her other child did not have this disease. The fact that the first child was discharged from the Municipal Hospital several days after her admission led Mrs. Fay to believe the child did not have diphtheria.

Who Owns the Prescription?—One of the daily newspapers in an editorial takes up this question, and before reaching conclusions as to the entitled ownership, reviews the arguments set forth by physician, druggist and patient in favor of their claim on the desired order. The physician bases his claim upon

the right by creation and right to renew indefinitely, so the paper said; the druggist bases his claim on the right of possession, while the patient claims by right of purchase. The dispute, the newspaper says, is made obscure by treating the prescription as substantial property. The prescription is nothing more than a written order to the druggist, requesting him to put up an article accurately described therein. The patient does not buy the prescription, but the compound called for by the order; consequently the prescription rightfully belongs to the druggist, who retains it as a receipt that the order was correctly filled.

Typhoid Fever.—While the number of cases of typhoid fever in Philadelphia have fallen from 152 last week to 89 this week, the number of cases in Nanticoke, a town near Wilkesbarre, where an epidemic is now prevalent, has steadily increased; fourteen new cases were reported in one day, the average being ten daily; the total number is now 212. According to Dr. Dixon, the source of infection is removed. He stated that the water pipes have been cleaned, sulphate of copper has been put in the water, and in a few days the reservoir will be pumped out and cleaned. While an improvised hospital has been provided, it is insufficient to accommodate the number of cases that have developed, so that hospitals in nearby towns have been asked to take as many patients as they can accommodate. The State Hospital at Hazleton, which is an hour and one-half by rail from Nanticoke, responded quickly; the other hospitals in the vicinity, especially in Wilkesbarre, also offered relief. Dr. Johnson, who has charge of the epidemic, found that in order to carry out the work funds were needed, and appealed to the citizens of the town for help; the appeal was not fruitless. In all, seven nurses from Philadelphia and Harrisburg have been sent to the town to care for the patients. The Director of Public Safety has ordered the police to locate all families who are using well water, in order that the water from all such sources may be tested bacteriologically. There are sixteen cases in Nanticoke.

CHICAGO.

Doctors Raise Visit Fee.—Because they need the money, is the simple and frank reason given by Evanston physicians for a rise in fees of one dollar a visit, which goes into effect this week. "Evanston is a more expensive place in which to live than Chicago, and for this reason prices for medical service should be at least as high in the suburb as in the city." For years Evanston physicians have been charging two dollars a visit, but they have recently organized a local medical society, and increased prices are the result. The society is also making an effort to secure physical examination of school children, and a plan for securing a lecture-room in the new library, in which popular talks on matters medical may be made, is also on foot.

Examinations for Positions on County Hospital Staff.—Examinations of candidates for places on the staff of the County Hospital will begin on September 28. Those who pass will be placed on the civil service eligible list, and will be assigned places on the staff when vacancies occur. Whenever a member of the present staff resigns or the place is made vacant it will be filled from the eligible staff. The life of the present staff cannot exceed six years, as it is fixed by the civil service act passed by the

State legislature, and no member of the present staff will be permitted to serve a second term. The examinations will be held by the County Civil Service Commission, but its chief details will be conducted by the examining board of reputable physicians and surgeons.

Staff of Vaccinators.—Dr. Heman Spalding, Chief Medical Inspector, reports that the appointment of a staff of vaccinators for the public schools was completed before the beginning of the school term. "Over two hundred vaccinators are equipped and ready to furnish free vaccination to all school children who apply on the school premises. Last year a few entered school upon false certificates of vaccination signed by doctors. Some of these contracted smallpox and a few died as the result of this criminal practice. One child permitted by the principal to enter school without any certificate of vaccination remained in school two weeks, contracted smallpox and died of that disease a week later. No vaccinated school child contracted the disease, though exposures to smallpox were numerous. The vaccine to be used by the public vaccinators is tested in the Department Laboratory, and is rejected if any impurities are found.

Laboratory Examinations.—During August, 1905, 488 physicians brought or sent to the Laboratory culture specimens, blood, sputum, etc., of patients suspected of diphtheria, tuberculosis, typhoid fever, etc., for examination. This is a daily average of more than twenty for the twenty-four working days of the month, and an increase of 41 per cent. over August, 1904. The practical value of this work to the health and life of the citizen may be inferred from the facts concerning typhoid fever. Out of 379 examinations made in the Laboratory of suspected typhoid fever, 111, or less than one-third, proved to be true typhoid, and the diagnosis was thus cleared up for the attending physician who modified his treatment accordingly. In 13 of the cases which showed the clinical or bedside symptoms of typhoid, and were being treated for typhoid, the Laboratory examination showed the disease to be intestinal influenza—the treatment of which is wholly different from that for typhoid fever.

An Ounce of Prevention.—The statement of the inadequacy of meat inspection in Chicago made by Health Commissioner Whalen merits serious attention. That constant and thorough inspection is the price of health is one thing modern municipal administration should have learned by this time. The city of Chicago may be poverty-stricken, but it cannot afford to neglect every reasonable precaution against such calamities as that which to-day is teaching New Orleans a tragic lesson. Dr. Whalen calls especial attention to the grave insufficiency of meat inspection. Where meat is distributed over the immense area of Chicago by hundreds of obscure retail dealers, it is impossible for a few inspectors to prevent the sale of meat which has become unwholesome after its inspection at the yards. Six inspectors are at work where forty are needed, and as a result hundreds of families are innocently imperiled by unwholesome meat. The matter is made worse by the fact that these victims are generally least able to protect themselves and to discover and combat disease. The staff of sanitary inspectors should be increased, says Dr. Whalen, at the same time, and there is little doubt that Chicago could not expend money more usefully than in the development of an efficient, well-equipped and non-political

body of inspectors, and a scientific and comprehensive system of food and sanitary inspection. The present equipment is plainly insufficient. The city is healthy, but it is so in spite of rather than because of the adequacy of the sanitary machinery. What is being done is being well done, but the provisions made for the health department should be greatly enlarged.

CANADA.

Toronto General Hospital.—The trustees of the Toronto General Hospital will soon take decisive action on the question of a new hospital, but in the meantime they have wisely decided that the present building shall be as far as possible equipped in every respect equal to the best hospitals in other great cities. Some time ago the plumbing was all overhauled and replaced, and many other improvements carried out, and within the past few weeks through the generosity of a few wealthy citizens valuable appliances have been provided. The wisdom of renovating the present building and improving its equipment is obvious when it is borne in mind that probably three or four years must elapse before the new hospital can be ready for use, and it would be unfair to the staff, as well as cruel to the patients to refrain from making all needed improvements on the plea of waiting for the new building. The Toronto General Hospital will now be splendidly equipped, and can, as it always did, give to its patients the benefits of the very latest discoveries and inventions for the healing of the sick. When the time comes, as it must at an early date, for the trustees to take action regarding the erection of the new building, the present board of trustees who have no preconceived plan to propose, will call in for consultation and advice representatives of the Provincial Government, the City Council, the University of Toronto, and private donors to the hospital funds, and these representatives, all desirous of having the very best of hospital buildings for this city, will probably call into existence a new hospital trustee board, in whom will be vested the property and the government of the greatly enlarged and improved institution. This new board will have grave and serious duties to perform, and will have to assume heavy financial responsibilities. No definite estimates of the actual cost of a site and building have as yet been made, but it will amount to a large sum, probably a million dollars, and even more, and there should be a fairly large endowment fund from the very first. Toward the necessary funds the present trustees offer to hand over all the property of the existing trust, valued at about \$600,000, and producing nearly \$25,000 annually. The Ontario Government has granted \$250,000 and authorized the University of Toronto to grant from its funds \$50,000 additional, the latter amount to go toward the purchase of a site. The city of Toronto has granted \$200,000, all of which must go toward the purchase of a site. Mr. Cawthra Mulock, one of the trustees, has given \$100,000, and there is said to be in sight another \$100,000. It will be obvious, therefore, that if the present endowment of \$25,000 per year be retained as an endowment for the new hospital there will be a large amount to be raised otherwise. The citizens of Toronto will without doubt respond to any appeal for funds as soon as the proper authorities are ready to ask for donations. There are three or four suggestions as to what will be done with the present

buildings once the new hospital is ready for occupation. The most feasible one is that a small hospital be retained on the present site for the accommodation of the eastern portion of the city.

GENERAL.

Purdue University.—On September 1, by the unanimous action of their respective boards of trustees, assembled in Indianapolis, the Medical College of Indiana was made the Medical Department of Purdue University, with the title of Indiana Medical College, The School of Medicine of Purdue University.

New Hospital for Jersey City.—Ground for Jersey City's new city hospital, which will be built on the site of the present ramshackle structure, was recently broken by Mayor Mark M. Fagan. The Mayor used the spade with which he upturned earth for the free public bath, the People's Palace and the new high school building.

American Doctors at Hamburg.—Drs. Allan and McLaughlin, experts of the American Shipping and Immigration Society, have arrived at Hamburg from Naples to study the cholera and inspect the ships. They praise the city's sanitary arrangements and express regret that exaggerated accounts of the danger have been sent to America.

Mexican Health Officer Coming.—A Mexican cable despatch to the *Herald* says that Dr. Eduardo Liceaga, president of the Superior Board of Health of Mexico, with a party of twenty-three, passed through El Paso, Texas, on September 18, for Boston, to attend the session of the American Health Association, to be held on September 25.

A Healthy Town.—The Board of Health of Montclair, N. J., has issued a statement concerning the healthfulness of the town, especially with reference to the absence of communicable diseases. It shows that for the six months ending September 1 there have been but five cases of typhoid fever. This record of about three cases in every 10,000 of the population is remarkable. No communicable disease of any kind has been reported since August 24.

Typhoid Epidemic in Springfield.—Dr. G. B. Magrath, of Boston, an assistant of the State Board of Health and an expert pathologist, is now practically in charge of the typhoid fever situation in Springfield, Mass., which has now reached the epidemic stage. While the Board of Health made no direct request of the State Board to look into the matter, the assistance thus derived will be very welcome, and hearty cooperation is being given, not only by the Board of Health, but by the water department and the milk inspector.

A New Mosquito Killer.—It has been announced by Dr. J. H. White, United States Marine Hospital Surgeon-in-charge in New Orleans, that the new mosquito exterminator known as "Culicide," discovered by Dr. Mims, chemist for the city Board of Health, will be adopted by the Government. Dr. White announced that the disinfectant is composed of equal parts of carbolic acid and gum camphor. He has advised strongly against amateur use of the composition owing to its explosive character. None but skilled employees of the United States Marine Hospital Service will be permitted to use it.

Starts a Parasite Exchange.—Dr. L. O. Howard, who was sent to Europe in June by the Massachusetts entomological officers for the purpose of collecting and shipping to this country parasites for the suppression of the gypsy and brown-tail moths, has returned to Boston. He announced that he had made an agreement with European officers whereby

they will ship to this country the insects needed for the moth warfare, in return for American parasites needed abroad. Dr. Howard said that the parasites he had secured merely would keep the moth pest in check, and that property owners should not in any way relax watchfulness over their trees.

Wholesale Vaccination in Newark.—All principals, teachers, janitors and pupils of the Newark public schools, numbering over 40,000, will be required within the next week or two to undergo a medical examination, so that it may be determined how many of them have not received a successful vaccination in the last five years. Those who have not will be vaccinated. The plans for this examination will be made at a meeting this week of special committees of the Board of Education and the Board of Health. It was accidentally discovered last week that at least 10 per cent. of the school children had not been successfully vaccinated within five years, notwithstanding the fact that nearly all of them held doctors' certificates which said they had been. It has always been known by the authorities that some of the pupils obtained fake certificates, but it was not imagined that the number was nearly so large.

The Harvey Society Lectures.—The first lecture of the recently organized Harvey Society will be given by Professor Hans Meyer, the distinguished pharmacologist of the University of Vienna. Professor Meyer will speak in German upon the subject "Die Theorie der Narcose." The lecture will be held on Saturday, October 7, at half past eight o'clock in the evening, in the New York Academy of Medicine. The second lecture will be given on October 14 at the same hour and place, by Professor Carl von Noorden, of Frankfurt-a.-M., the well-known authority on diabetes. The title of Professor von Noorden's lecture is "Modern Problems of Metabolism." The lecture will be delivered in English. Other lectures of the course will be given by Profs. L. F. Barker, Howell, Lee, Levene, Mendel, Minot, T. H. Morgan, Novy, Park, Theobald Smith and J. C. Webster. It is hoped that the Harvey Society may be of use in furthering the wider diffusion of knowledge of the medical sciences. The Harvey Society cordially invites those interested to attend these lectures.

Getting at the Lazy Worm.—That the people of Porto Rico have become enthusiastic in their desire to rid themselves of the scourge of anemia, popularly designated the "lazy worm" affliction, is indicated in a report just received by the Surgeon General of the Army from Capt. B. K. Ashford, who is expending \$15,000 this year in a campaign against that malady. During the months of June, July and August nearly 10,000 patients had been treated, with cures in nearly every instance. In August, at the medical station at Abonito, exactly one-third of the population was treated. This number was 2,482. Of these six died, 716 were discharged as fully cured, while the majority of the remainder are on the road to recovery. The effect of the disease is to render the victim anemic and absolutely unfit for work. The disease gradually wastes away the tissues, during which time the afflicted become a public charge on the community. The natives believed this wasting away was from lack of food and ridiculed the idea that a cure could be effected through the use of medicine.

A Neglected Epidemic.—Two hundred and sixty-one cases reported to the Board of Health, with victims ranging in age from nine months to forty-three years, and a total of thirty-three deaths, is diphtheria's record in Southbridge, Mass., since it began ravaging a year ago, or, to be precise, a year, a month and two weeks

ago. And even after this long siege of the disease, which has appeared in substantially every locality in Southbridge, it still continues, and the Board of Health now has eight new cases on its hands. The Southbridge Board of Health has issued orders and instructions enough to stamp out a plague, but the orders have not been enforced, and the epidemic continues. In a large number of cases parents have recklessly failed to adhere to the advice given them by the Board of Health to keep children in afflicted families indoors, but have freely allowed children to mingle here, there and everywhere in localities containing the disease. This point is the keynote to the situation. A rigid and effectual quarantine has never been maintained, in the face of one of the most dreadful epidemics of the disease in the history of the State.

Robs Marine Hospital Fund.—James W. Boyd, a clerk in the Marine Hospital Service, was arrested September 18 on a warrant sworn out by Chief Clerk W. P. Worcester of that office, charging him with embezzlement. He was held in \$10,000 bail for examination. The amount of loss, according to Boyd's confession, is not less than \$20,000. It was Boyd's duty to prepare bills for the approval of the Surgeon General, and when checks were signed they were delivered to him to be mailed. It is charged that he manipulated the bills by erasing dates and amounts of duplicates left in the office, and that he got the money on the checks by indorsing the name of the firms to which they were issued. It is alleged that the work has been going on for three years, but Boyd was not suspected until a recent illness last Thursday compelled him to be absent. When his desk was opened a number of suspicious documents were found. Property belonging to Boyd, valued at about \$8,000, has been seized. He had been in the public health service for twelve years, appointed from Westchester County, N. Y., and was drawing a salary of \$1,800 a year. His fondness for automobiling had attracted attention to him about town.

President Roosevelt Opens the Diamond Jubilee.—On Saturday, September 16, President Roosevelt touched the electric button that opened the diamond jubilee, given in aid of the yellow-fever fund in New Orleans. The city was a mass of flags and bunting as if prepared for a carnival. The President sent a telegram to Mayor Behrman, expressing congratulations and sympathy, and in the correspondence that followed made clear his intention of visiting New Orleans in October, if the people of that city wish it, "subject only to the feeling of other States on the quarantine matter." This message created a profound sentiment of appreciation in the city, and at a meeting of the citizens' committee an answer was sent by Mayor Behrman reiterating the invitation and advising that Dr. J. H. White, United States Marine Hospital surgeon in charge, had authorized the statement that absolutely no danger need be apprehended, and there is no reason on that account for canceling or postponing the visit. The only obstacle in the way is the rigid quarantine of Arkansas, which is included in the President's itinerary after leaving New Orleans. Communication has been opened with Gov. Davis and the President of the Arkansas Board of Health, and favorable action is expected.

To Deal With Morally Insane.—Prof. Liszt, of Berlin, in a paper on "moral insanity," which was read at the Congress of Criminologists, submitted that special measures must be carried out to render morally insane persons, whether criminals or not, harmless to society. Secondly, the professor insisted that morally insane persons must be punished with less severity than

others. Prof. Thorp, of Copenhagen, opposed the second proposition. He said it was customary in Denmark to punish the morally insane less severely than ordinary criminals, but the system provoked general discontent. It was only suitable for those who were irresponsible from external causes, such as drunkenness. Experience showed that persons who were morally insane were not susceptible to improvement by punishment, and always relapsed into crime. They should not be punished, but should be dealt with by special treatment. Dr. Kielhorn, representing the schools of Hamburg, said the percentage of morally insane children was far greater than was generally believed. Over 1,000 were taught in nine Hamburg schools. Two per cent. were confirmed criminals, whose rescue was hopeless, but the remainder could be reformed by suitable treatment. Punishment by imprisonment or detention did more harm than good. After a long debate, in which many speakers denounced Prof. Liszt's propositions as unworthy compromises, both were adopted by a large majority.

Fever Fighters Encouraged.—Though hope that the fever in New Orleans would be eradicated by the first of October was some time ago abandoned, many persons feel that if the threats of the authorities have their effect and suppression is no longer practised, the fight will be virtually at an end fifteen days later than the day set. The situation indicates some improvement, notwithstanding the warm, wet weather. In several centers of the city where the fever heretofore prevailed it has disappeared and nests of infection are scarce. Two positive cases have been reported from Kentwood, a lumber town in Tangipahoa parish, not far from the Mississippi line. These are the first cases in that vicinity. From Tallulah and Lake Providence come reports of improvement in the situation, the absence of deaths being encouraging. At Lake Providence the situation is somewhat complicated by the number of walking cases that are discovered among the negroes. They spread the fever before they are discovered and isolated. For the purpose of reassuring communities in the South dealing with New Orleans, Dr. White authorized the statement that all cars loaded with freight will be sealed and fumigated by the United States Marine Hospital Service and so certified. This announcement is expected to cause a general raising of freight quarantines. Dr. Rosenau, bacteriologist of the Marine Hospital Service, has forwarded a jar of four hundred specimens of the stegomyia which he has gathered, to Surgeon-General Wyman, for study in the Government laboratory. Dr. Rosenau says that while some proof is needed it is not improbable that the local bacteriologists who have been at work in this field have discovered the germ of yellow fever.

Some Medicines Are Liquors.—Under a decision recently rendered by the Commissioner of Internal Revenue every druggist who after December 1 of this year may sell certain so-called patent medicines having whisky or other distilled spirits as the chief ingredient will be obliged to pay a special tax to the Government as a liquor dealer. The manufacturers of these medicines will be required to pay the special tax imposed upon rectifiers and liquor dealers. Commissioner Yerkes, who promulgated the decision after conference with Secretary of the Treasury Shaw, is convinced that several so-called medicines widely advertised and extensively sold are really not medicinal in their character beyond the inherent medicinal quality which may be possessed by the alcohol or other distilled spirits which forms their chief ingredient. In his order imposing the special liquor tax on dealers handling those so-

called medicines Commissioner Yerkes said: "The fact that these compounds during the existence of the statute imposing a tax on proprietary medicines were, without the necessity of investigation into their medicinal character, by the terms of the law made subject to that tax because they were held out to the public as medicines, does not afford ground for relieving the manufacturers from special tax as liquor dealers under the provisions of section 3244, revised statutes and amendments. It is held that the statute requires the exaction of this special tax from the manufacturer of every compound composed of distilled spirits, even though drugs are declared to have been added thereto, when their presence is not discoverable by chemical analysis, or it is found that the quantity of drugs in the preparation is so small as to have no appreciable effect on the alcoholic liquor of which the compound is mainly or largely composed. The same ruling applies to every alcoholic compound labeled as a remedy for disease and contagion containing, in addition to distilled spirits, only substances or ingredients which, however large their quantity, are not of a character to impart any medicinal quality to the compound. The Department has heretofore accepted the sworn statements of the manufacturers as to the ingredients. Hereafter this will be determined, not by the declaration of the manufacturers, but by the Government chemists, who will go into the open market and buy proprietary articles under suspicion. To-day the Department refuses to make known the ones which it believes will be subject to this tax on December 1, but by that time a list will be prepared, so that the country grocer who keeps a shelf of general family medicine, will be able to learn those which he can carry only by becoming a liquor dealer within the meaning of the Federal law.

OBITUARY.

Dr. LEWIS E. HANMORE died in Newburgh, N. Y., September 19, from consumption. He was a graduate of the College of Physicians and Surgeons, New York, with the class of 1884, and a member of various medical societies in Europe and America.

Dr. ROBERT ORMISTON, a physician of Brooklyn, N. Y., died September 19, at Stamford, N. Y. He was born at Rossie, St. Lawrence County, N. Y., seventy-three years ago, and was graduated from the University of Pennsylvania in 1858. He served in the Civil War as a surgeon with the Thirtieth New York Infantry. For thirty years he was head surgeon of the Brooklyn Hospital.

Dr. THOMAS JOHN BARNARDO, the founder and director of philanthropic institutions by which many thousand orphan waifs have been rescued, trained, and placed out in life, died September 19. Dr. Barnardo had suffered from angina pectoris for some years. He was born in Ireland in 1845. Early in life he was made a Fellow of the Royal College of Surgeons. In 1885 he received a medal from the French Société Nationale d'Encouragement du Bien. He wrote many pamphlets and founded various magazines explanatory of his work. Perhaps the best known of his publications is "Something Attempted, Something Done."

CORRESPONDENCE.

THE FIGHT FOR THE RIGHT.

To the Editor of the MEDICAL NEWS:

DEAR SIR: How to combat successfully the immense evil of quackery and secret, or even proprietary, medicines with published formulae, is and has been a great and unsolved problem to all conscientious medical practitioners. After much thought and experience I know of only one practical way, as I believe.

Patients should not read or become familiar with their prescriptions. The nearest relative or friend should be told during the period of treatment and later, when the patient is well or no longer under professional advice, he may at times, as frequently be told, if he desires to know, what means *precisely* have been used to produce the desired result. But to permit any patient, and especially the one suffering from a chronic disease, to reason morbidly and imperfectly about what is being done for him is always prejudicial in greater or less degree to his present ultimate well-being. A physician is either skilful, reliable, absolutely square, or he is *not*, and no power on earth will change the one or the other. As a rule of action let the patient in advance, therefore, get all possible information in regard to his medical adviser before he places himself in his care. But once he has selected him for good and sufficient reasons let him trust him and rely upon him unreservedly. When this is generally done we shall then see the downfall of quackery, charlatanism, fraud, ignorance—no matter how thinly or thickly coated. But until that state of mind is reached by the public generally I for one am of the opinion that all our worthy efforts in other and different directions will remain necessarily only partially successful. These lines, Mr. Editor, are prompted by your editorial entitled "A New Hope in the Battle with Quackery" (MEDICAL NEWS, Sept. 2, 1905, p. 457).

BEVERLY ROBINSON.

New York, Sept. 6, 1905.

EVIDENCE AGAINST ILLEGAL PRACTITIONERS.

To the Editor of the MEDICAL NEWS:

DEAR SIR: I have read with considerable interest the comment under the heading "Echos and News—General," on page 418 of your issue of August 26, and while I am informed there has not been for several months any prosecution actively carried on by the County Association and none by the State Association, yet the subject to which you refer is interesting, and in taking this matter up arrogate to myself the title of "Legal Luminary," referred to in the article.

For over five years I have conducted in the County of New York the prosecution of illegal practitioners of medicine in various branches, and in but one instance has there ever evidence been secured or attempted to be secured against a regular practising physician for the crime of abortion. In that instance I made use of an especially employed prostitute in preference to a legally married woman, for the reason that I considered the act itself degrading, and felt that no married woman ought to be asked to subject herself to any possible indignity, especially when she was actually child-bearing.

I consider this class of work undignified not only to the profession of law, but also undignified to the profession of medicine, and as wholly without the province of medical organizations, and while the crime in this one instance was not to be actually consummated, but only the attempt was to be charged, yet I felt and still feel a sense of abhorrence even to securing evidence against a member of the medical profession, a profession than which there is none more dignified, honorable and far-reaching in its influences and offices. However, in the direction of securing evidence against medical mountebanks, charlatans and what are ordinarily called quacks, the same ethical principle may be involved, and in that direction I differ absolutely with the sentiment expressed by the distinguished jurist in so far as it refers to the securing of evidence against this class of law-breakers.

The conditions which exist in the small cities of the State of Indiana are so divers and insignificant when compared with those in a great metropolis, that it is perhaps unfair to refer to the remarks of Judge Buckingham as applying to conditions here. Of course, the statement of the number of medical mountebanks in the County of New York as being twenty thousand is absurdly exaggerated; yet, with the laws as they exist at present, there is no evidence of a decrease in the number in the past five or six years. That is due in my judgment, to the inadequacy of our statutes in dealing with perhaps the most dangerous class in its effect directly upon the public health and their facilities for advertising their wares. The crime of illegal practice of medicine is a misdemeanor in the State of New York and is punishable by a fine or term of imprisonment, or both, limited only to a maximum in its degree of punishment, and leaving the minimum wholly within the discretion of our courts.

The investigation of complaints against this class of medical law-breakers has been conducted under my personal supervision by men and women of good morals and who have come recommended to me highly as to their integrity in every particular. To be sure, there are unpleasant features develop many times in the conduct of their investigations and discussions necessarily incident thereto, which would not be expected to be a topic of conversation for the drawing-room; yet, I have never continued a single individual in my employ, either man or woman, who I have not felt sure were only allowing such discussions as are ordinarily carried on in a reputable physician's office, and all of such employees have been instructed under no conditions to endanger their health or to permit any improper acts to be committed, nor to subject themselves to indignities under any conditions.

During this period I have caused to be investigated upward of eight hundred complaints. Still, I must confess that the results of the work are not satisfactory, though the criticism to be inferred from the opinion of the distinguished jurist cannot be accepted nor allowed to go unchallenged. The fact that in our State the Association making the charge and securing the conviction receives the fines imposed, is unsatisfactory in its results, though it seems almost impossible that these great organizations could carry on this work on account of its enormous expense, without the assistance which these fines afford.

The conduct of these prosecutions must be continued by medical organizations and with paid men and women acting as detectives to secure the evidence; the police department of our cities is wholly inadequate, but the law must be amended making the crime of the illegal practice of medicine a more serious one in the eye of the law before these charlatans can be brought to realize the enormity of their offenses. Public opinion must demand of such of our daily newspapers as publish the advertisements of these mountebanks that they are no longer to expect the aid of the reputable press, and with co-operation in this direction, together with a revision of the law, is the hope of stemming the tide of increasing violations of the medical law. Respectfully,

JAMES TAYLOR LEWIS,

Counsel, The New York State Medical Ass'n.

New York, Sept. 19, 1905.

Cholera.—Six new cases and one death were reported in Prussia as the record for the twenty-four hours ending at noon September 20.

SOCIETY PROCEEDINGS.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS.

Eighteenth Annual Meeting, held Sept. 19, 20, and 21, 1905.

The President, Howard W. Longyear, M.D., of Detroit, Mich., in the Chair.

The Association met in College Hall of Hotel Astor, New York City, and after an address of welcome by Dr. Geo. B. Fowler, of New York, which was responded to by Dr. Charles A. L. Reed, of Cincinnati, proceeded with the reading of papers.

Multiple Pregnancy Complicated by Double Pyosalpinx.—Dr. O. H. Elbrecht, of St. Louis, Mo., read a paper with this title and reported an interesting case in detail. The most striking feature of this case was the obscurity of this fortunately rare complication, for without the autopsy he would certainly have abided by his first and only ante-mortem diagnosis, *i.e.*, septicemia, and would have continued to believe that the general peritonitis was the result of the septic infection traveling upward through the tubes and thus into the abdominal cavity, for such a process to his mind would be all the more plausible in the large and flabby uterus of multiple pregnancy, more especially from the fact that large blood clots were passed on the first day, showing the relatively imperfect contraction of the uterus. The case also shows very plainly the ability or the degree of tolerance of the pelvic peritoneum to cope with infections, as it is his opinion that the peritonitis was not general until the sixth day, for up to that time there was no hiccupping, no vomiting, no abdominal distention and no apparent weakness. Another deduction is that gonorrheal peritonitis, while not very dangerous, if confined to the pelvic peritoneum, is surely dangerous when it creeps out of the pelvis and becomes diffuse. It is also his firm belief that the pyosalpinx in this case was unilateral at the time of impregnation, and that the infection was transmitted by the escape of virulent pus to the open fimbriae of the unaffected side. The only cases he could find analogous to his have been reported by Hare and Talley. The reports of two pathologists in the speaker's case, who worked independently of each other, both showed that the tube, which was secondarily infected, was infected by way of the fimbriae, as its pathology was confined entirely to its outer third; the middle third showed only slight inflammatory changes, and the inner third, including the uterine attachment, was normal.

Blank projects the theory that virulent bacteria in the tube have a tendency to become pyosalpinx during pregnancy by reason of the hyperemia. He further states that 50 per cent. of those cases in which the tubes are adherent in the cul-de-sac rupture as pregnancy advances, from tension, pressure, or from stretching of the adhesions, which forces pus out of their fimbriated extremity. The experience of the essayist with three cases of this class substantiates Blank's theory. These three cases were reported.

Dr. Charles A. L. Reed, of Cincinnati, Ohio, in the discussion, said that this case, with the pus tube undetectable, only adds one possible condition that points to the reason why possibly these cases should be subjected to operation earlier and more radically than they have been heretofore. With a double pus tube, with antecedent conception, it follows that the deduction of the essayist, that the infection of the tube was unilateral prior to impregnation was absolutely incontrovertible. As to infection on the other side, the probab-

ity is that it resulted from a progressive invasion of tissue, the mucous structure serving as a nidus of infection occurring within the uterus following delivery.

Dr. Herman E. Hayd, of Buffalo, N. Y., is inclined to believe that we see many cases of pyosalpinx complicating delivery that are due to a latent gonorrhea existing in the tube, which springs into activity as a result of the trauma incident to labor.

Dr. Charles L. Bonifield, of Cincinnati, Ohio, believes many cases of double pyosalpinx clear up sufficiently to allow the patients to become pregnant. In years gone by he told patients they would never become pregnant when he detected a mass on each side, and there were further evidences of pyosalpinx, and on a few occasions he has been deceived after six, eight or twelve years, the pus having become absorbed and the women having become pregnant. He cited a case he had many years ago of double pyosalpinx, or he thought it was such. The woman refused operation. Everything in the pelvis was matted together. She gradually got better, and at the end of six or eight years became pregnant, and he delivered her. She passed through labor nicely, but at the end of a week she suddenly raised herself in bed and dropped over dead.

Dr. Rufus B. Hall, of Cincinnati, Ohio, does not believe that a woman with double pus tubes can afterward become pregnant. If such a woman should become pregnant he would be inclined to doubt the diagnosis of bilateral pyosalpinx.

Dr. John Young Brown, of St. Louis, Mo., thinks the mere existence of pregnancy in the case narrated by the essayist precludes the possibility of the woman having had bilateral pyosalpinx. The pathology, as revealed by the autopsy, shows conclusively that the case was one of unilateral pyosalpinx, which was dormant and lighted up by the trauma of labor, and that the leakage from the pus tube produced the diffuse peritonitis, and the condition found on the other side was due to bathing this side with the pus that was produced by the peritonitis.

Dr. Lewis S. McMurtry, of Louisville, Ky., said abdominal section in a puerperal convalescent is a very serious procedure. The operation of vaginal incision and drainage, so enthusiastically advocated by Pryor, would accomplish very little in a case like the one reported from the standpoint of therapeutics; hence in the case reported, we have a very valuable addition to the scanty literature of the subject as to the possibility of pathology of the tubes connected with puerperal disease and a valuable guide to operative interference.

Some Considerations on the After-Management of Abdominal Sections.—Dr. Walter B. Chase, of Brooklyn, N. Y., said, in reviewing his personal experience, he is led to the conclusion that the principal and by far the most frequent condition after laparotomy requiring treatment is flatulence. The accumulation of gas in the intestinal tract is present to a greater or less extent in a majority of cases. The principal causes are reversed peristalsis, intestinal paresis, and the effect of the anesthetic itself. He seldom gives anodynes, except in conditions of pain, making a possible exception in cases when peritonitis was present prior to the operation, or other structures involved in the operation were so friable that peristalsis should be prevented for a time, or in cases following intestinal anastomosis. Its administration for the relief of pain is admissible and perhaps mandatory. It is a matter of much moment what anodyne is selected. Ordinarily he uses codeine hypodermatically in doses of gr. $\frac{1}{4}$ to $\frac{1}{2}$, or more, if required. While its power to relieve pain and check peristalsis is much inferior to that of morphine, its

lesser disturbance of the nervous system, checking of secretion, and tendency to undue constipation makes it an agent of great value. It is imperative that a reliable preparation be used. In troublesome cases of continued nausea the administration of small doses of cocaine, gr. 1-10 to 1-12, exercises a salutary sedative influence on the nerves supplying the stomach, and is attended with happy results. Either the nausea or flatulence, or both, may disappear in a few hours after operation. Among the newer remedies for the relief of intestinal paresis is the alkaloid of the calabar bean. Salicylate of physostigmine, given in doses of gr. 1-100 to 1-50, or even more, hypodermatically, repeated once in four hours, seems to induce a powerful contraction of the circular fiber of the intestinal tract. The diet of patients after abdominal section calls for the greatest circumspection, always following the rule that nourishment, taken per os, before the stomach retains or digests it, is positively harmful. When shock is profound, minute doses of morphine sulphate are among the most powerful stimulants, and superior to most for prompt and sustained effect. The author discussed at length the importance of bodily temperature and position of patient after laparotomy.

Some General Principles in Conservative Pelvic Surgery.—Dr. John F. W. Whitbeck, of Rochester, N. Y., said it is decidedly advantageous to have a general knowledge and a general experience before making use of special methods in the treatment of pelvic disorders. Medical and mechanical means should be tried in suitable cases before resorting to surgical intervention. Only diseased organs should be removed. Sound organs and normal parts of healthy organs should be preserved. Conservative plastic surgery should be employed to save such organs as can be made functional, or to serve some useful purpose. Diseased organs should be removed in the order of their pathological precedence and importance, with a view to benefit the patient by promoting her comfort and prolonging her life, even if a perfect cure is not to be expected.

Trivial Pathological Conditions of the Uterus and Adnexa Considered as Causes of Severe Gastric Disturbances.—Dr. Francis Reder, of St. Louis, Mo., said that during the last two years eight of these patients came under his observation, six of whom presented a train of symptoms that would ordinarily be grouped as those of hysteria or neurasthenia, moderately severe in character, the remaining two patients being free from any such pronounced neuropathic phenomena, and some in fairly good health, with the exception that their stomachs were weak. The pelvic organs upon examination gave evidence of disease, and although the examination did not reveal anything of a serious nature, yet local minor surgical procedures afforded relief. In the cases cited by the author, it was a surgical procedure that anticipated the pathological conditions. He said to wait for pathological conditions to give evidence of their existence by more pronounced local symptoms in gynecological disease, where there is a marked reflex neurosis, would be to invite secondary conditions that might prove of a very grave nature.

Dr. Rufus B. Hall thought the case reported by the essayist had pathological conditions sufficiently marked to justify operation regardless of their neurotic condition. To cure nervous patients it is sometimes necessary to remove every obstacle in the way of perfect health physically. He is convinced that if many of these cases had not been operated upon, their condition would have become worse, a more grave pathology would have resulted later, and it would have been more trying for the patients, thus making the surgery more

difficult, and harder for the patients to recover from the operation.

Dr. X. O. Werder, of Pittsburg, is not enthusiastic about operating on neurotic patients, as the results are not usually good, and he feared the essayist would have some of the patients upon whom he had operated return in a few months with the same symptoms having recurred.

Prolapsus Uteri and Its Treatment.—Dr. Herman E. Hayd, of Buffalo, N. Y., briefly spoke of the various conditions which contributed to the production of prolapsus uteri and then immediately discussed its treatment by surgical means only, and according to the degree of the descensus and the necessity for the preservation of the uterus, the operative treatment was carried out. He believed that in minor degrees of prolapsus uteri with rectocele and cystocele, the Alexander operation with well directed plastic surgery of the vagina and perineum would cure these simple forms. When the prolapsus extended to the introitus, or the cervix pointed through the vulva, a vaginal hysterectomy, with a well-performed anterior and posterior colporrhaphy and a perineorrhaphy accomplished the best results; and the effect was permanent if the vault of the narrowed vagina was sewed firmly permanent to the cut edges of the broad ligament. When it was desirable to save the uterus for the purpose of child-bearing, or to continue the function of menstruation, the cervix must be amputated and an anterior and posterior colporrhaphy and perineorrhaphy must be performed, and the uterus firmly ventrofixed to the abdominal wall through a median abdominal incision. Usually all these operations could be performed at one sitting, but if it was desirable to make two operations, the posterior colporrhaphy and perineorrhaphy must be done at the second time, say three weeks after the first operations. The author, however, preferred the removal of the uterus, as this operation had been infinitely more successful in his hands. He also depreciated the performance of all operations which closed the vagina, as he believed this unnecessary and because he had seen much unhappiness result from this procedure. For the extreme cases of pelvic hernia, he was particularly pleased with a reprint sent him by Dr. Crile, in which he advocated a very elaborate and extensive operation. For one such case, which occurred in his own practice, he sewed the united vagina and broad ligaments to the abdominal wall, and the result was very satisfactory. However, such extreme measures were seldom called for, as most cases could be cured by the other operations described. Dr. Hayd then detailed his operation upon the posterior vaginal wall and perineum, in which he cut out a large triangular piece of the posterior central part of the vagina, and then with the finger in the rectum as a guide to make tense the obturator fascia and levator ani muscle, he sewed these opposing structures in perfect apposition, with fine chromic gut, which layer of sutures was buried by bringing together the vaginal mucous membrane by another layer of sutures, and finally the skin was brought together by silkworm gut. This operation lessened the size of the vagina and lengthened it by producing an oblique canal instead of a horizontal one, and by carefully approximating the fascia and levator ani, the *sine qua non* of all perineal operations, the result remained fixed and permanent.

Surgery of the Liver.—Dr. William J. Gillette, of Toledo, Ohio, read a paper on the subject in which after discussing the control of hemorrhage, the power of the liver to regenerate itself, infection and cholemia,

he described a means of controlling liver hemorrhage in certain cases of severe bleeding when the blood vessels cannot be easily reached. It sometimes happens that to tie them requires a further enlargement of the lacerated liver substance. This of itself increases the gravity of the patient's condition. Three years ago he was called in haste to see a young girl of fourteen years, who had been shot by a target gun, the bullet entering between the eighth and ninth ribs, near the costal cartilage, and passing through the right lobe of the liver, lodging behind the stomach. The low velocity of the bullet had caused it to make a tear rather than a perforation. When first seen the child was nearly pulseless, and had all the evidences of a severe internal hemorrhage. Her face and lips were white and bloodless. The abdomen was opened. An incision was made close and parallel to the costal cartilages on the right side. The abdomen was found full of blood which could be seen freely oozing from the torn liver. He attempted to control this first with catgut ligatures, but the friability of the tissues prevented. Some time previously he had had an experience with a similar wound of the liver made by a bullet, and had attempted to control the hemorrhage by packing with gauze; but the patient, a strong, robust man, had promptly died from the continued loss of blood. Post-mortem revealed that the gauze packing had been entirely inadequate to control it. Having this case in mind, he did not feel like trusting to gauze again, and inasmuch as it was not controlled by direct ligation, it occurred to him that by passing sutures from within, entirely through the liver substance and through the abdominal wall, making exit between the ribs after the manner of a staple, and tied firmly on the cutaneous surface, that permanent and constant pressure could be made, sufficient to control the hemorrhage without the ligature cutting into the friable liver tissue. Five or six such sutures were now introduced on the proximal side of the wound, each one embracing about three-quarters of an inch of the liver substance. Care was taken to link them together so as to include all the bleeding tissues in their bite. The ligatures emerged between the ribs the same distance apart as they were entered on the liver substance, and when firmly tied all the hemorrhage and oozing ceased at once. Other injuries to the viscera, which were slight, were repaired, a drainage tube inserted, and the abdomen closed. The patient made an uninterrupted recovery. He has since used this suture in two instances, in one of which in removing a very adherent gall-bladder he met with a severe hemorrhage, which was readily controlled with it. Recovery was prompt. The third case was one in which a hydatid cyst, the size of a small coconut, was removed, together with a large number of gall-stones from a suppurating gall-bladder. This patient unfortunately died from peritonitis a few days later, but the hemostasis was perfect. The author referred at length to the more recent contributions to liver surgery.

Papillary Cyst Adenoma of the Breast.—Dr. Edward J. Ill, of Newark, N. J., says that this disease is comparatively rare, but that he has seen eight cases in his practice. There is not very much literature about the disease. Its characteristic symptoms are a clear yellowish-pink to dark bloody discharge from the nipple. On palpating the breast a small tumor can be made out early in the disease, which may become multinodular later on. He has

observed cases for from a few weeks to eleven, twelve and twenty-one years. The pathological condition found is a papillary adenomatous mass projecting into the milk duct. It is non-malignant in character. The patient may get well without any interference. When the disease persists, he advises removal of the breast.

Dr. Miles F. Porter, of Fort Wayne, Ind., said that cystadenoma of the ovaries and other organs is prone to become malignant, and no one could tell whether the tumor is malignant or not until he has removed it. Some of these tumors are pronounced to be non-malignant by microscopists, but there is recurrence after operation. Others are pronounced malignant, but the disease does not return after operation.

Dr. Joseph Price, of Philadelphia, has never regretted the early removal of tumors of the breast for fear they might become malignant. He cited cases in point.

Dr. Gunther, in closing the discussion for Dr. Ill, said these patients are not aware they have a tumor. If they have a tumor it is very small. There is no involvement of the axillary glands, and they seek medical advice principally on account of the discharge mentioned from the nipple. The history and symptoms in these cases are sufficient to exclude malignancy.

The Byrne Operation and Its Application in the Radical Treatment of Cancer of the Cervix.—Dr. X. O. Werder, of Pittsburgh, Pa., described the operative technic employed by Byrne, and said that Byrne places special stress on the importance of thorough and repeated cauterization of the wound surfaces and edges from which cancerous material has been removed, regarding it as the best safeguard against a recurrence of the disease. The most remarkable feature of the Byrne operation, when compared to all other operations undertaken through the vagina for the cure of cancer of the cervix, and one which seems to justify Byrne's conclusions, is the almost uniform absence of local recurrence. While employing the method described by Byrne in his first cases, he invariably followed it by the ablation of the remaining portion of the uterine body and appendages. Subsequently, however, he simplified the procedure very materially by dispensing with the preliminary amputation of the cervix in order. The principal features of the Byrne operation have been retained, namely, thorough and repeated cauterization of all wound surfaces and edges. The operation differs from the usual vaginal hysterectomy by the use of the cautery knife for detaching the cervix from its vaginal connections; the application of the electro-thermic clamps devised by Downes, and the final cauterization of the stump with the dome-shaped cautery. He described the technic as he employs it at the present time. Of the sixteen cases operated upon by him, only one died about four weeks after the operation, from uremia. She is supposed to have suffered from nephritis for ten years previously; the operation, he thinks, may have hastened, but not caused, her death.

(To be Continued.)

A Distinguished Japanese.—Dr. Suzuki, Surgeon-General of the Royal Japanese Navy, is at present a visitor to America. He attended as a special guest of honor the recent meeting of the American Association of Obstetricians and Gynecologists in New York.

THE AMERICAN THERAPEUTIC SOCIETY.

Sixth Annual Meeting, held May 4, 5 and 6, 1905.

Vice-President John V. Shoemaker, of Philadelphia, in the Chair.

The Therapeutic Art.—Dr. Oliver T. Osborne said therapeutics was a much-neglected science and one that deserves especial study and discussion in the medical schools. Without the final application of therapeutics, all scientific physiology, etiology and pathology of the world are of no value. Therapeutics, he said, arrests the etiology which produces the disease, helps physiology which is disturbed by the disease, and removes the pathology which is produced by the disease. To-day the educated physician rarely speaks of curing the disease; he prefers the term "manage," and leaves the term "cure" to quacks and nostrum venders. The management includes diet, hygiene, climatic water, electricity, if indicated, and the necessary drugs. He ventures the opinion that graduates in medicine even after a hospital training are less prepared in the bedside management than in any other branch of medicine; for that reason each medical school should have a special chair of therapeutics, held by a clinical man, a specialist in internal medicine.

The Effects of Intravenous Injections of Ergot on the Mammalian Circulation.—Drs. Torald Sollmann and E. D. Brown, of Cleveland, O., prepared this paper. Owing to the absence of both Dr. Sollmann and Dr. Brown the paper was read by Dr. Morgan, of Washington, D. C. The principal results of their investigations show that the rise of blood pressure produced by ergot in dogs is insignificant or too short for any practical purpose; that its effects are cardiac rather than vasomotor. They do not believe that the drug is useful to modify the general circulation. It acts upon vascular areas and alters the distribution of the blood in individual organs. This, they say, might explain the efficiency which is claimed for the drug in certain obscure diseases. They made some 350 injections in 38 animals. The injections were first made into the muscles, but the results were poor, so that intravenous injections were then tried.

In opening the discussion of this paper Dr. F. P. Morgan, of Washington, D. C., stated that ergot was beneficial to produce contraction of the uterus and to check hemorrhage. In his opinion it should not be employed in labor cases until the child and the placenta are expelled. He maintained that if postpartum hemorrhage is well advanced ergot is inefficient. He finds ergot useful in menorrhagia and subinvolution of the uterus.

E. D. Fisher, of New York City, informed the members of the society that he has seen good results in some cases of tic douloureux follow the injection of ergot hydermatically.

Dr. C. T. Osborne said that he always injected the ergot into the deltoid, using the same muscle for each injection and applying a wet dressing after the introduction of the drug to prevent infection. He finds the drug of value in cases where the heart action is weak, and in such cases in which there is a tendency to edema of the meninges, or in delirium due to toxins. He believes ergot must have some effect upon the vessels of the nervous system for recurring headaches are benefited by its use. Dr. R. Reyburn, of Washington, D. C., finds ergot valuable in women suffering with headaches about the time of menopause. Dr. S. Solis Cohen, of Philadel-

phia, finds this drug beneficial in those individuals who believe they are suffering with a lesion of the heart, but merely have an intermittent pulse.

The Proper Sphere of Bromides in Epileptics.—This paper, by Dr. Frederick Peterson, of New York, was read by Dr. E. D. Fisher. Dr. Peterson announced that he is convinced that more epileptics are injured than are cured by the use of the bromides. He depicted some of the symptoms which, he said, are produced by this drug; he informed the society that the bromides produce some of the forms of insanity, especially melancholia. If it must be used small doses should be combined with antipyrin or some other similar drug. He is firmly convinced that outdoor exercise and a regulated diet are of great value, and maintains that ten per cent. of the cases sent to a farm or colony are cured.

In opening the discussion Dr. Fisher said he was not such an enthusiast in regard to the colony treatment, as he has seen epileptics go to those places and return without the slightest benefit. Although much attention should be paid to hygiene, yet he does not believe that the bromide treatment can be abolished, and he knows of no drug which can take its place. He has seen it used by a patient for twenty years without the slightest deleterious effect. He strongly inclines to the view that there is a pathological lesion in the brain in epilepsy because of the identity of the aura and the course in each recurring attack.

Dr. Cohen, of Philadelphia, stated that much of the depression which follows the use of potassium bromide is due to the potassium. Dr. O. T. Osborne, of Yale University, maintained that a better knowledge of the thyroid and of the parathyroid might throw some light upon the condition of epilepsy; probably in this disease a symptom only is being treated. He does not believe large doses of the bromides are necessary and sodium chloride should be eliminated from the diet. Dr. A. J. Hall, of Washington, D. C., favored the use of the bromides. Dr. R. Reyburn believes the nitrogenous diet should be cut down as low as possible in epilepsy.

The Management of Chronic Parenchymatous and Chronic Interstitial Nephritis.—Dr. S. Solis Cohen, of Philadelphia, first outlined the types of this disease, the causes and the complications. In America he regards the "strenuous life" as an important cause of the disease. As the first item in the management he spoke of the hygiene, then of the diet, mentioning milk as a therapeutic element. The next food stuff after milk, that these patients may take, is eggs. In the chronic interstitial nephritis he finds meat necessary, but in the parenchymatous it should be avoided. Green vegetables, except those that produce much calcium oxalates, may be given. He mentioned clothing as very important. These individuals should have a moderate amount of exercise with rest, but if too feeble massage will act as a substitute. The amount of urea excreted must be watched, as this element is an index to the accumulation of that substance in the economy which induces uremia. He finds two drugs of especial value to increase the amount of urea, viz., strontium and aconite; of the two he prefers strontium bromide. He finds aconite better than nitroglycerin, and although the strontium lactate will produce a greater excretion of the urea than the strontium bromide he prefers the latter because of some unknown action. He is not inclined to use the nitrites in chronic interstitial nephritis with hypertrophy of the heart,

except in small doses. If the chloride of gold and sodium, in doses of 1-24 of a gr., are given in chronic interstitial nephritis for long periods of time, good results are obtained. Uranium nitrite will cause the albumin to disappear which persists in the urine of cases of diabetes mellitus after the sugar is no longer present.

In opening the discussion of this paper Dr. Judson Daland, of Philadelphia, referred to the frequency with which nephritis follows attacks of influenza, without giving rise to symptoms; he also referred to the forms of the parenchymatous nephritis which are clearly incident to intervening attacks of intestinal and hepatic intoxications. The rise in arterial pressure may be due to some toxine, the nature of which is still obscure, and to remove this substance from the economy he advises the use of hot baths which are so easily regulated. He has not seen the beneficial results from digitalin secured by Dr. Cohen.

Dr. T. E. Satterthwaite, of New York, stated that he has seen the amount of albumin in chronic interstitial nephritis reduced by the administration of nitroglycerin, and has found digitalin a useful diuretic. He explains the variation in the results obtained by different investigators by the idiosyncrasies to the drug. He referred to a series of investigations on dogs, in which variation in the results were obtained. Dr. Osborne is not favorably impressed with the use of digitalin.

Medical Treatment of Serous Effusions.—Dr. Thomas L. Coley, of Philadelphia, in discussing this subject, called attention to the importance of the study of osmotic disturbances and to the opinion of Loeb and others that this is of greater importance than the mechanical factors of blood pressure. He pointed out the significance of the study of sodium chloride excretion and retention to the relation of the edemas as having a direct bearing on the dietetic treatment. He laid stress upon the value of sialogogues in selected cases and the dangers of diaphoresis in skin edemas; this process removes the watery portion of the edema, leaving the solid material in a more concentrated form and with consequent more toxic properties. The limitations and applicability of diuretics was discussed especially of calomel, caffeine, theobromine and digitalis.

Value of Physiological Salt Solution in Circulatory Failure.—Dr. H. C. Wood, Jr., of Philadelphia, said that from the results of his experiments he is convinced that by the introduction of from 750 cc. to four times the normal amount of blood in a normal animal the arterial pressure is not influenced. After bleeding these animals until the heart beat was now no longer perceptible the introduction of the salt solution causes the arterial pressure to rise, but it is transient only, for the animals soon die. He found that the escape of the fluids from the body through the kidneys is not nearly so rapid as is suspected, although the introduced fluid above the normal amount of blood in the vessels does not remain in these structures, but he believes it escapes into the tissue spaces where it remains until used, although he could not demonstrate subcutaneous edema during life; at autopsy he found edema of the peritoneum and mesentery and pulmonary edema. By the introduction of the physiological salt solution he could not reduce the hemoglobin below 50 per cent.; the hemoglobin of a dog which before the experiment was 115 per cent. was by section of the cord reduced to 100 per cent., then by the introduc-

tion of salt solution to 60 per cent.; some time after the experiment it was again examined when it was found to be 60 per cent., by the injection of a second lot of fluid the hemoglobin would not be reduced below 50 per cent. He finds that the temperature of the solution in the reservoir and where it enters the vein differs from 5° to 15° C., but he has demonstrated to his satisfaction that the difference in the temperature produces very little if any effects.

In opening the discussion upon this paper Dr. Robert T. Morris, of New York, informed the society that by the introduction of salt solution into the veins of a septic patient he expects to see the temperature drop and his patient improve. If the bleeding is slow in extrauterine pregnancy he does not use the salt solution, but if shock is present and the hemorrhage is rapid he gives the fluid before the operation, and if in any operation he anticipates much hemorrhage he prepares to introduce the salt during the operation.

Clinical Experiences with Certain Drugs in Heart Disease.—Dr. Thomas E. Satterthwaite, of New York, read this paper. During the course of the paper the author stated that adrenalin is the most powerful heart stimulant that is known. It increases the pressure immediately, and he has found that a single dose sometimes relieves palpitation at once. For heart failure he uses nitroglycerin, but if this drug produces throbbing in the temporal arteries he regards its use as dangerous, for it may give rise to apoplexy. He finds iodine a useful drug in arteriosclerosis of syphilis and of old age; it dissolves the hyperplastic tissue. He begins with a preparation containing $\frac{1}{2}$ gr. of iodine and then gradually increases the dose to 2 grs. This drug may be given in acute simple endocarditis and even in acute malignant endocarditis. The edema and the dyspnea and pain due to heart disease of the aged are relieved by the administration of 1-200 gr. of arsenic. Strychnine is slowly absorbed and slowly eliminated and should not be given for a period longer than two weeks. Strophanthus, he says, accomplishes better results than digitalis; its action lasts for several days; it is not cumulative, but it is not so reliable as digitalis. Sparteine reduces the frequency of the pulse and increases the pressure, but it is not as valuable a diuretic as digitalis. He depends a good deal on camphor which is a diffusible stimulant, an antispasmodic and a sedative. He is convinced that moderate doses of digitalis may produce death, but if this drug be combined with the nitrites the danger is eliminated.

In opening the discussion on this paper Dr. Osborne declared that in heart disease the arterial system must be studied as much as the heart, if not more. He regards an alterative as a drug that in some way modifies the internal secretion. While speaking of the internal secretions he quoted the phrase, "We are as old as our arteries"; but added, "Our arteries are as old as our thyroids." Digitalis has been used too much, he said; strophanthus is better. Adrenalin should be administered with care, for, if pushed, depression, perhaps cardiac, sets in. He believes much of the digitalin on the market is really digitoxin. Wilcox, continuing the discussion, noted that the action of adrenalin was first upon the vessels which embarrasses the heart to a certain extent. Cactus is the only drug that acts upon the ganglion of the heart. Porter lauds benzoic acid and the caffeine salts as heart stimulants. Fowler believes in the combination of several drugs as a heart

stimulant. H. C. Wood, Jr., informed the society that single doses of adrenalin has produced pulmonary edema and an excessive use of this drug gives rise to arteriosclerosis. Cohen suggested that the drug was not used long enough to produce the conditions referred to by Wood. Coley states that nitroglycerin should be given in small doses and often because of its transient effects. Shoemaker spoke of the misuse of strychnine and digitalis and of the efficiency of scoparius in dropsy.

Practical Medical Treatment.—Dr. John V. Shoemaker, of Philadelphia, spoke of the beneficial results obtained from the galvanic current in the treatment of enlarged prostates and locomotor ataxia. It, of course, does not cure either condition, but the improvement is marked. He exhibited a case of xanthoma which has been benefited by blood tonics, and a case of alopecia areata treated with electricity and blood tonics.

Dr. E. B. Bronson, of New York, opened the discussion and stated that xanthoma is very frequently associated with diabetes mellitus. In the treatment of alopecia areata he uses sulphur, resorcin and naphthol.

The Recognition and Treatment of Cholecystitis.—Dr. Robert T. Morris, of New York, maintains that the significance of the adhesions in the region of the gall bladder have been overlooked; they are produced as a result of the desquamation of the endothelial cells incident to the presence of the *Bacillus coli communis*, which, he said, escapes through the thin-walled gall bladder. Gastralgia and intestinal disturbances may be due to eye-strain, normal involution of the appendix, gall-bladder disease and adhesion in the pelvic organs. To differentiate these conditions he finds the following a very useful aid: If the gastric or intestinal distress is due to pelvic adhesions the ganglion on each side of the umbilicus is tender; if due to involution of the appendix the ganglion on the right side alone is tender, and if due to eye-strain neither is tender. In cholecystitis the temperature ranges from 99.5° to 98° F.; this variation in temperature is due to the adhesion dragging on the sympathetic ganglion. To prevent adhesions he uses powdered aristol or Cargile membrane.

Dr. John B. Deaver opened the discussion and said that in his opinion medical men should not attempt to cure gall-stones, and he does not see any beneficial results from the treatment at Carlsbad.

Dr. Carl Beck took an opposite view, and said the medical treatment should be tried first, and he does not believe that the gall-bladder should be removed in all cases of gall-bladder disease.

The Treatment of Intestinal Indigestion.—Dr. George B. Fowler, of New York, attributes the cause of indigestion both to the quality and to the quantity of the food. He maintains that there is no difference in the digestive quality of stale and fresh bread, and that rice and hominy do not tend to provoke fermentation. He does not allow his patients rich soups, steak, pork, chicken or turkey from storage houses, white potatoes (fried), sweet wine, cooked oysters, cheese, kidney, liver and cooked tomatoes. Intestinal indigestion is rarely present alone; therefore he always examines the mouth, nasopharynx and the stomach. If the intestinal disturbance is due to alterations in the nervous system he prescribes the triple valerian or cannabis indica. He also spoke of the value of hydrotherapy in this disease.

Treatment of Chronic Diarrhea.—Reynold Webb Wilcox, of New York, said if the diarrhea be due to some mechanical irritation he frees the intestinal canal of the substance by the administration of a dose of castor oil; but if the condition is due to fermentation he gives hydrochloric acid. Increased peristalsis of the small intestines does not produce diarrhea. He employs adrenalin chloride if the stools are of a serous type, and ammonium bromide in the nervous types of diarrhea. To those types of diarrhea which he terms "neurotic," and due to hysteria, neurasthenia, migraine and the climacteric, he gives strontium bromide and later potassium arsenite, and to those which he terms "hemic" due to uremia and malaria, he gives arsenic, methylene blue and ergot. Opium should never be given to these patients unless the intestinal canal is empty, and only to check excessive peristalsis. The diet for patients suffering with chronic diarrhea should be milk.

Dr. D. O. Leech, of Washington, D. C., in discussing these two papers, stated that he gave liquids before or after and not during a meal because the gastric was diluted more than it should be.

Rectal Alimentation.—Dr. William H. Porter, of New York, maintains that small amounts of albuminous substances are absorbed in the rectum, but very little sugar or starches. This form of feeding may be employed when the stomach is partially disabled, but to him it is unsatisfactory.

In the discussion Dr. R. Reyburn maintained that when the patient is ill the economy needed much less food, and that the amount taken through the rectum may bridge him over to such a time when the food can be administered through the mouth. He never feeds by rectum oftener than six hours, and believes it better to do so every eight hours.

Etiology and Treatment of Infantile Atrophy.—Dr. John Blake White, of New York, in discussing this topic, takes the ground that the atrophy is due to disorders of assimilation and absorption, and that the enteritis is a secondary condition. He advised the use of warm baths, massage, outdoor exercise, cod-liver oil and strychnine nitrate 1-200 gr. He also spoke of the use of intestinal antiseptics, as guaiacol carbonate menthol, and of the use of thymus extract which exerts some influence on bone structure. He suggested the use of radium, the chloride of gold and sodium and, if the patients are tuberculous, manganese.

Notes on the Treatment of Hay Fever and Asthma.—Dr. Charles H. Knight, of New York, laid great stress upon the examination of the nasal cavities and the pharynx in all cases of asthma. In the treatment of hay fever he has found Dunbar's serum of value in some of the cases, but condemns the use of cocaine, and is not greatly impressed with adrenalin. He has used Clark's solution with some success.

Prophylaxis of Pneumonia.—Dr. James M. Anders, of Philadelphia, first spoke of some factors instrumental in propagating the disease, as close confinement, exclusion of light, individual predisposition and the bacteria-laden clothing of both the sick and healthy. Then he took up the prophylaxis, calling attention to the protection of individuals from barometric changes, from pneumonic patients and to excessive use of clothing, also to the correction of the mode of American living. The weak during an epidemic, he maintains, should have tonics and strychnine; lesions in the air passages must be attended to, in order to prevent mouth breathing and

the sleeping-room must be well ventilated. He dealt with disinfection of the sputum both the healthy and the diseased, of the sprinkling of asphalt streets, and of the use of antiseptics, which should always be preceded by thorough cleansing of the mouth. He condemns the expectoration into cloths which are then burned. Pneumonia should be placed on the list of reported diseases, the regulation of the pneumonic patient should be under municipal government; he also laid stress upon the ventilation of all public places.

Recognition and Treatment of Pancreatic Disease.—Dr. Carl Beck, of New York, in taking up this question, pointed out that in pancreatic inflammations fat is present in the feces and sugar in the urine. The character of the pain is not a reliable sign. He referred to the sudden pain, the collapse, the constipation and the vomiting, none of which is pathognomonic for the disease; in the subacute inflammation the symptoms are less severe. The chronic form may be due to bacteria, syphilis, arteriosclerosis, hepatitis, injuries and to gastric disturbances. In this type albuminuria and glycosuria are usually present; there may be constipation or diarrhea or vomiting. He favors operation in all cases where hemorrhagic pancreatitis is suspected, and uses hot irrigations, and packs with iodoform gauze. When the pancreatitis is due to cholecystitis operation upon the latter condition will cure the former.

Management of Injuries to the Knee-joint.—Dr. DeForest Willard, of Philadelphia, first dealt with sprains for which he advised ice and rest in the acute stage and later heat, if the fluid exudate is large aspiration is necessary. When he dealt with dislocation of the semilunar cartilages he recommended reduction by manipulation first, and if dislocation recurred operation. If the pain in passive motion is too severe the condition can be greatly aided by the use of heat. Sensitive joints are often the result of trauma, but may be hysterical; to this condition he applies the term "ankyphobia." When blood clots exist the joint should be opened and the foreign substance removed. He recommends that passive motion be begun as soon as the chronic stage is reached.

Value of the Correction of Errors of Refraction in Psychoses.—Dr. E. D. Fisher, of New York, did not read his paper because the time was too short, but said that in his opinion epilepsy is not relieved by the correction of errors of refraction; he does not mean to imply that these defects should not be corrected, however.

Treatment of Incontinence of Urine in Children.—Dr. Noble P. Barnes, of Washington, D. C., said in the treatment of this condition stress should be laid on the diet, the training of the child to retain the urine for a certain number of hours, the outdoor exercise and the cold bath to be followed by thorough rubbing. For highly acid urine only are drugs in this condition of any value, and then he gives atropine and strychnine.

BOOKS RECEIVED.

SURGICAL DIAGNOSIS. By Dr. O. G. T. Kilian. 8vo, 449 pages. Illustrated. Wm. Wood & Co., New York.

MANAGEMENT OF SECTION CASES. By W. J. S. McKay. 8vo, 651 pages. Illustrated. Wm. Wood & Co., New York.